Exclusive! Sierra's First CD Game (see page 66)

Job Hunting from Your PC!

June 1990

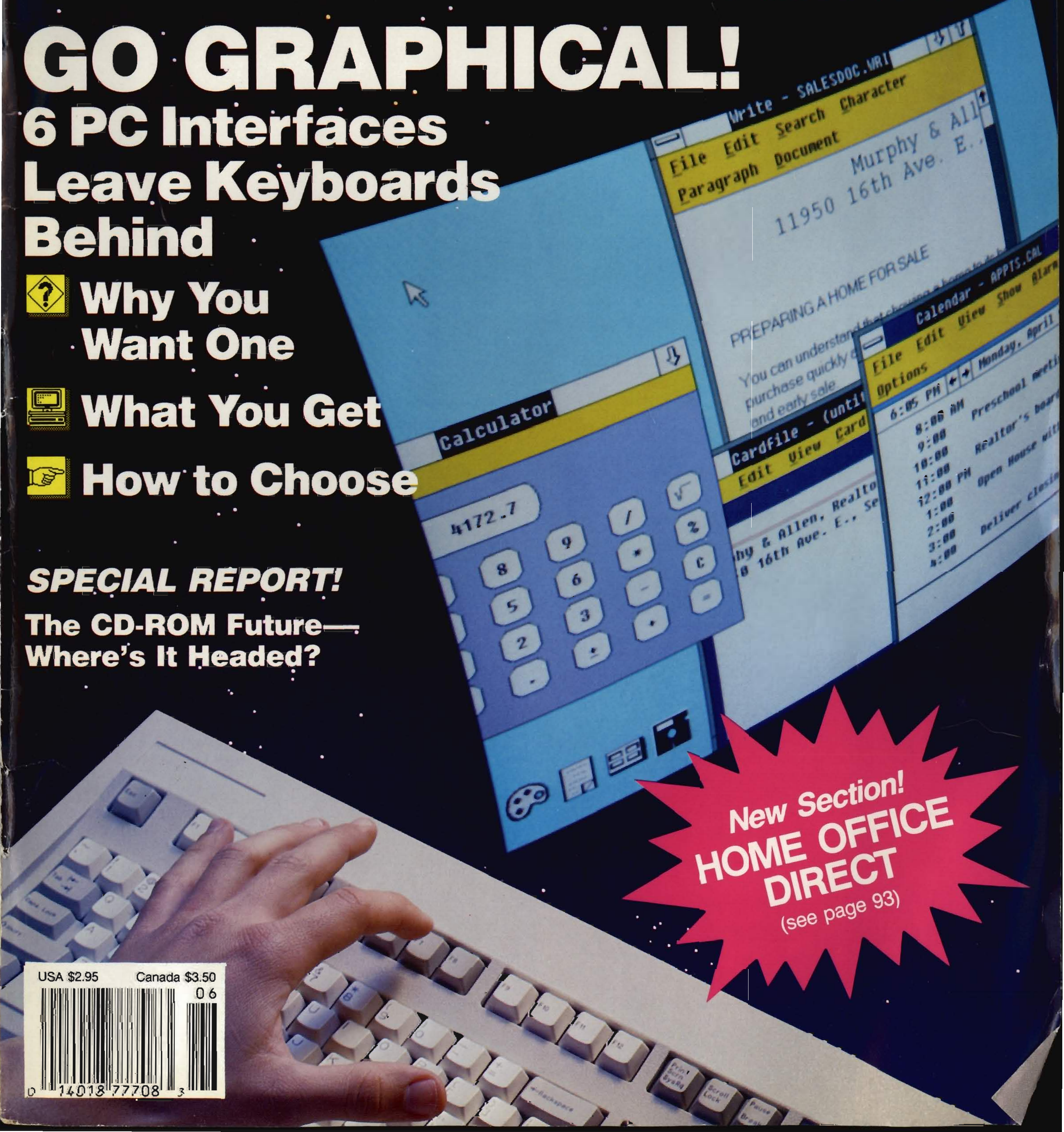
COMPUTE!

THE CHOICE OF HOME PC ENTHUSIASTS SINCE 1979

GO GRAPHICAL!

6 PC Interfaces Leave Keyboards Behind

- Why You Want One
- What You Get
- How to Choose

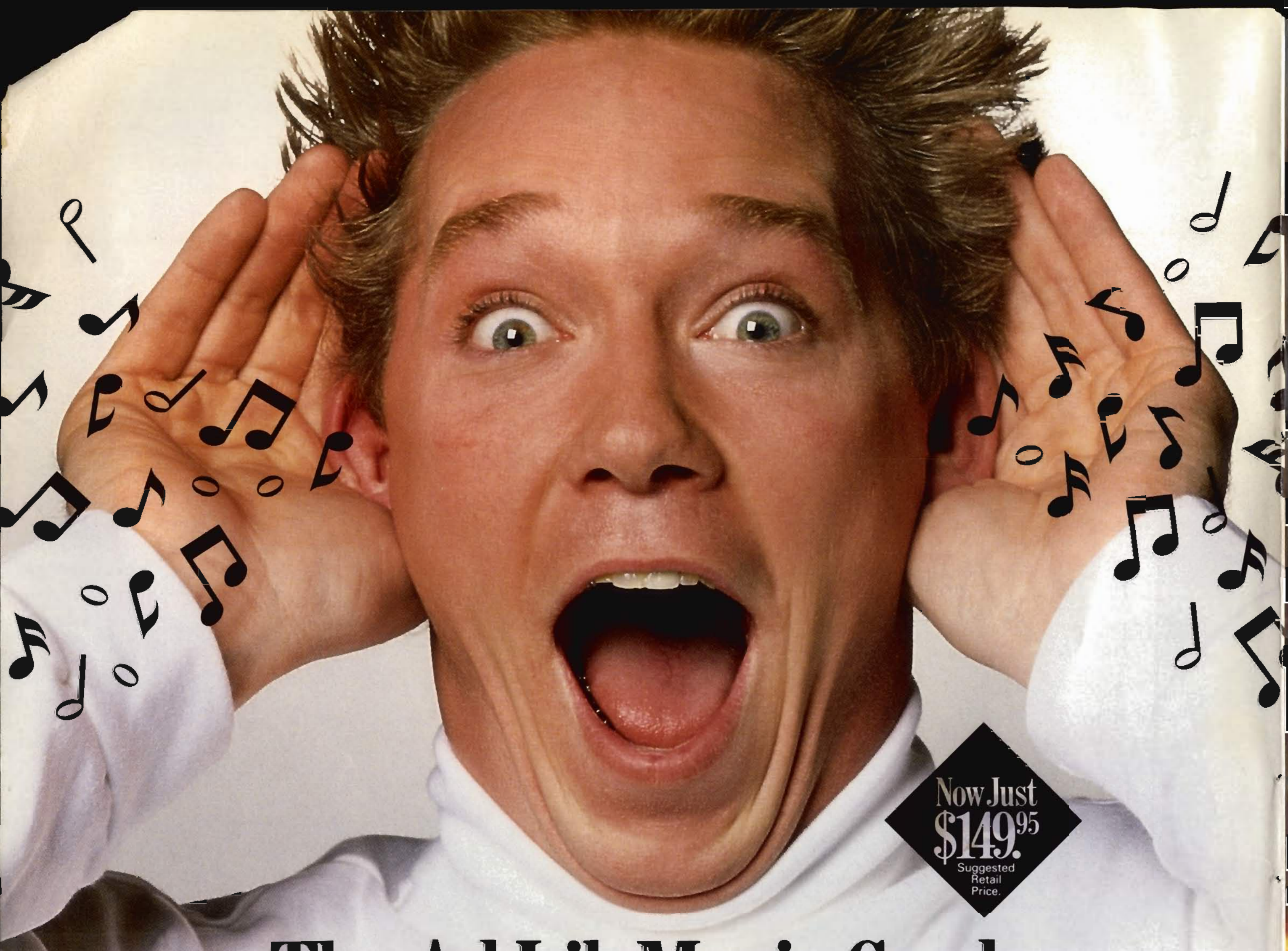

Write - SALESDOC.WRI
File Edit Search Character
Paragraph Document
Murphy & All
11950 16th Ave. E.
PREPARING A HOME FOR SALE
You can understand that choosing a home to be
purchase quickly
and early sale
Calendar - APPTS.CAL
File Edit View Show Alarm
Options
6:05 PM
Monday, April
8:00 AM
9:00
10:00
11:00 PM
12:00
1:00
2:00
3:00
4:00
Preschool meeting
Realtor's board
Open House with
Deliver closing
Cardfile - (untitled)
File Edit View Card
Murphy & Allen, Realtor
11950 16th Ave. E., Se
Calculator
4172.7

SPECIAL REPORT!

The CD-ROM Future—Where's It Headed?

New Section! HOME OFFICE DIRECT (see page 93)

USA $2.95 Canada $3.50
06



Now Just $149.95

Suggested Retail Price.

The Ad Lib Music Card: Open your ears and blow your mind.

Asteroids are hurtling by. Enemy photons are destroying the rear deflectors. Engines strain as they reach critical mass. Suddenly you hit the retros, loop around, and fire with everything you've got.

And what kind of awesome, breath-taking music is your computer playing? "Bleep, bop, beep." Pretty weak, eh?

Well listen up. Because now there's the Ad Lib Music Card. It's the digital music synthesizer that's conquering the final frontier of truly realistic game playing—totally ear-blasting sound.

Confront the dark overlord, and Ad Lib's 11-piece orchestra will back you up with gutsy, heart-swelling music. And if you meet an untimely death, rest assured that Ad Lib's funeral dirge will bring tears to the eyes of your loved ones.

In fact, the Ad Lib sound is so hot, major game developers are now designing dozens of new adventures with special soundtracks just for the Ad Lib Music Card.

Call us at 1-800-463-2686 for the name of your nearest dealer, for more information, and for the ever-growing list of major game titles with spectacular Ad Lib soundtracks.

Add the missing dimension to your games with the Ad Lib Music Card. From a solo to a symphony, Ad Lib's music makes the adventure come alive.

AdLib™

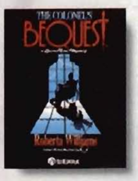
Ad Lib Inc., 50 Staniford Street, Suite 800, Boston, MA 02114. ***1-800-463-2686*** in U.S. or Canada. ***1-418-529-9676*** International. Fax: ***1-418-529-1159.***

New Compatible Games.

Here are just some of the hottest new computer games designed for use with the Ad Lib Music Card:

Lucasfilm's Loom

MicroProse's Sword of the Samurai



Sierra's The Colonel's Bequest

Activision's Deathtrack

Activision's MechWarrior

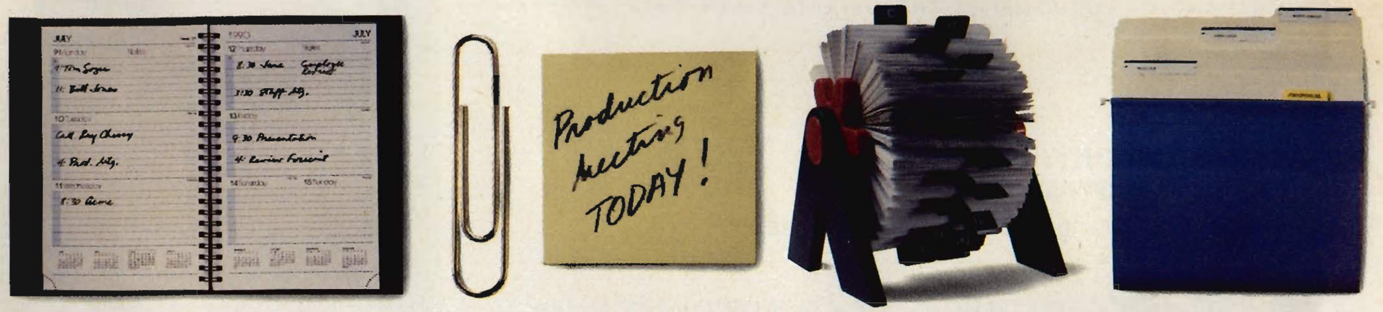
Taito's Bubble Bo

System requirements: IBM PC, XT, AT, or compatible with 256K RAM, DOS 2.0 or higher, CGA, EGA, or monochrome graphics adaptor, and headset or external speaker.

© 1990 Ad Lib. Ad Lib is a registered trademark of Ad Lib Inc. IBM is a registered trademark of International Business Machines Corporation.

Circle Reader Service Number 190

The current tools of management aren't good enough.



Introducing ARRIBA, the software you can't manage without.

Arriba is a powerful Personal Information Management System, not just an electronic file cabinet. There's no tech-ese to master. No complex maneuvers on the keyboard to call up your information. Just pop-up menus that make it easy to start using Arriba the day you load it on your computer.

"*Arriba* is a strong and flexible package, one that just may meet your information-management needs head-on."

COMPUTE!

Arriba helps you manage people, tasks, and events. Organize your thoughts, ideas, notes, schedules and contacts into cohesive action plans. Cross reference names and phone numbers to task lists, task lists to project folders, project folders to status reports, and more.

"If you've entered the information in *Arriba*, you can find it–fast."

COMPUTE!

Arriba's full-text search technology finds any piece of information in seconds. And it isn't limited to just pre-defined key words. If you can remember any part of any note, Arriba can find it.

"*Arriba* is highly customizable and can be adapted easily to handle information specific to individual needs."

Infoworld

Arriba's flexible approach lets you manage your personal information the way you want–by using the built-in applications or by customizing your own folders.

Friendly. Logical. Powerful. That's Arriba. No wonder BYTE calls it, "The Painless PIM."

GOOD ***Good Software Corp.***

It's not just our name, it's our committment.

1-800-272-GOOD

Call now for a free demo package!

Discount EGGHEAD SOFTWARE

Suggested Retail Price $195.00. Available through fine dealers nationwide.
©1990 Good Software Corp. Arriba is a trademark of Good Software Corp.

COMPUTE! 1990 AWARD CHOICE
IN RECOGNITION OF EXCELLENCE IN A HOME COMPUTER PRODUCT

COMPUTE!

THE CHOICE OF HOME PC ENTHUSIASTS SINCE 1979

CONTENTS

SPECIAL REPORT:
CD-ROM IN MOTION /18/ KEITH FERRELL
The discs are spinning, but where are they headed?

IN FOCUS: GRAPHICAL USER INTERFACES

THE GUI IN YOUR FUTURE /26/ HOWARD MILLMAN
The command line still rules, but there's a GUI in your future.

MY VIEW /35/ BRIAN DOUGHERTY
Mass-market computing demands flexibility and ease.

COMPUTE!'s JUNE SHAREPAK DISK /36/
RICHARD C. LEINECKER
Create menus, manage configurations, solve finance problems.

BUYER'S GUIDE /38/ MICKEY McLEAN AND LIZ CASEY
GUI Applications: Let's get graphical.

RESOURCES /49/ EDITORS
Learn all about GUIs from these books and online sources.

DEPARTMENTS

NEWS & NOTES /6/ EDITORS
The Amiga 3000, IBM comes home, and more notes on the news.

LETTERS /11/ EDITORS
Sanyo sources, grinding disk drives, tracking Logo.

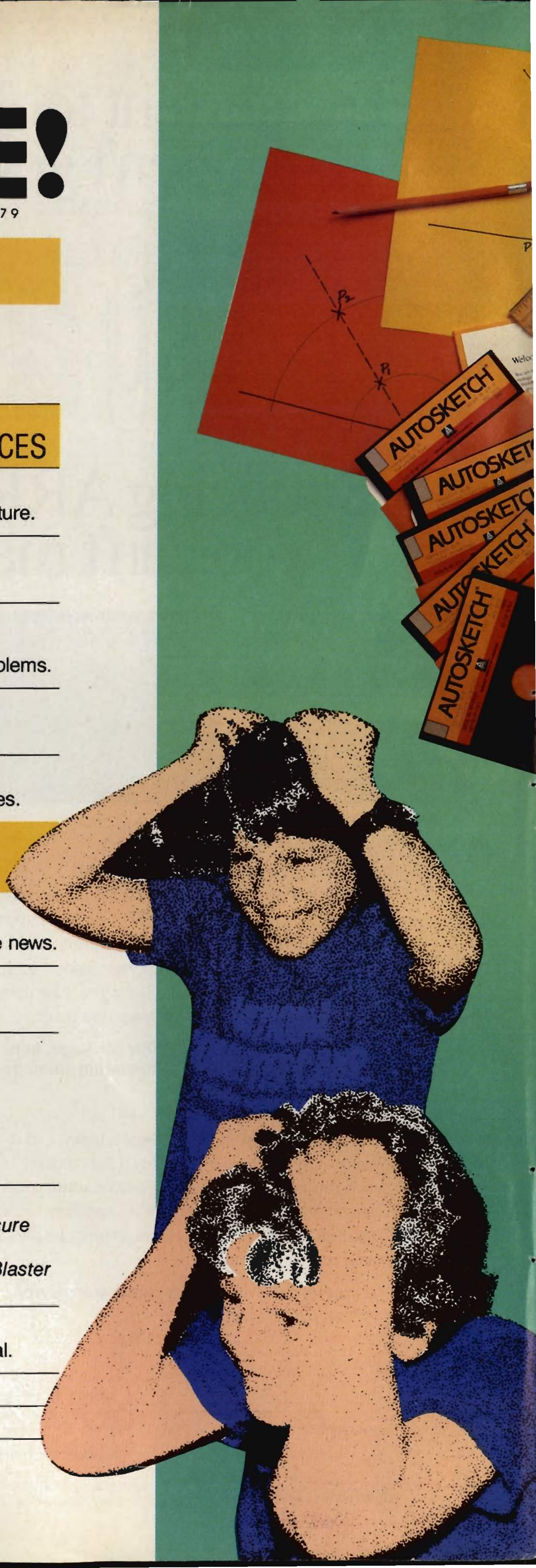
COMPUTE! SPECIFIC
MS-DOS /12/ CLIFTON KARNES
Commodore 64/128 /13/ NEIL RANDALL
Apple II /14/ GREGG KEIZER
Amiga /15/ DENNY ATKIN
Macintosh /16/ DAVID ENGLISH

REVIEWS /58/
Toshiba 1000SE ● *Software Toolworks World Atlas* ● *Leisure Suit Larry III: Passionate Patti in Pursuit of the Pulsating Pectorals* ● Tandy 4016 SX ● *Knights of Legend* ● *Alge-Blaster Plus* ● *PC-Write Lite* ● *Railroad Empire*

NEW! **HOME OFFICE DIRECT** /93/ EDITORS
Products and pointers for the home business professional.

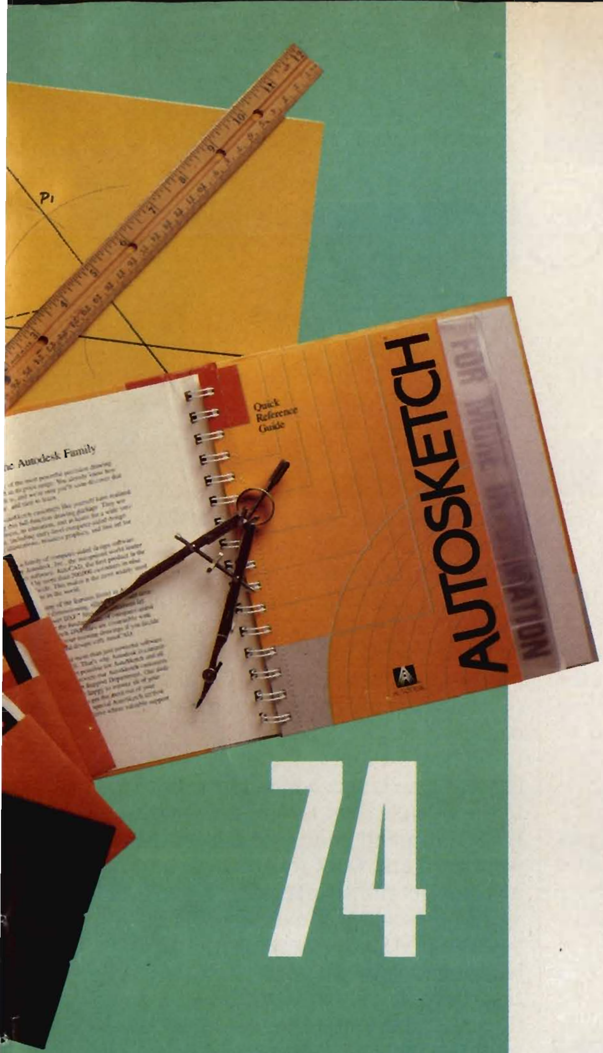
NEW PRODUCTS /116/ MICKEY McLEAN

HOTWARE /120/ SOFTWARE BESTSELLERS



Cover Photo © 1990 Mark Wagoner

JUNE 1990 • VOLUME 12 • NO. 6 • ISSUE 121



74

World
Region
Index
Flip
Print
Quit
Atlantic Ocean
Amazon Basin
Pacific Ocean
Topography of South America
Elevation

58

80

PRODUCTIVITY

COMPUTE! CHOICE /50/ MARVIN BRYAN
PC File 5.0 handles like a pro, for the cost of a rookie.

GET A JOB! /54/ MICKEY McLEAN
Your computer can help you find the right job.

PC PRIMER /59/ HINTS AND TIPS FROM OUR READERS
Save disk space with an elegant batch-file solution.

ENTERTAINMENT

COMPUTE! CHOICE /60/ RICHARD SHEFFIELD
The Colonel's Bequest emphasizes plot over puzzles.

CD-ROM: IT'S NO FAIRY TALE /66/ KEITH FERRELL
Sierra On-Line breaks technological ground—with the help of Mother Goose.

GAMESCOPE /72/ HINTS AND TIPS FROM OUR READERS
Rescuing Rosella, reloading in *Falcon,* scoring with Larry Laffer.

LEARNING

COMPUTE! CHOICE /74/ BRUCE HAASE
Learn design and drafting skills with *AutoSketch*.

SUMMER COMPUTING /80/
MICHAEL C. PERKINS AND KELLY RIVERS
Sign up your kids for a summer computing program.

HOMEWORK /84/ HINTS AND TIPS FROM OUR READERS
Word games for building vocabulary, color keys for kids.

COLUMNS

EDITORIAL LICENSE /4/ PETER SCISCO
Today's infant technologies will benefit from a PC GUI.

IMPACT /53/ DAVID D. THORNBURG
Make visual presentations from your PC.

GAMEPLAY /64/ ORSON SCOTT CARD
Computer games aren't the only programs you can play with.

DISCOVERIES /78/ DAVID STANTON
Cameras and computers join to create a visual extravaganza.

CONVERSATIONS /101/ KEITH FERRELL
IBM's Peter Blakeney discusses the multimedia movement.

OFF LINE /119/ DAN GOOKIN
The computer zodiac tracks the cycles of your machine.

COMPUTE! The Choice of Home PC Enthusiasts Since 1979 (USPS: 537250) is published monthly by COMPUTE! Publications, Inc., ABC Consumer Magazines, Inc., Chilton Company, one of the ABC Publishing Companies, a part of Capital Cities ABC, Inc. Editorial Offices are located at 324 West Wendover Avenue, Greensboro, NC 27408. Domestic Subscriptions: 12 issues, $19.94. **POSTMASTER: Send Form 3579 to: COMPUTE!**, P.O. Box 3245, Harlan, IA 51537. Second-class postage paid at New York, NY and additional mailing offices. Entire contents copyright © 1990 by COMPUTE! Publications, Inc. All rights reserved. ISSN 0194-357X.

EDITORIAL LICENSE

PETER SCISCO

PUTTING A NEW FACE ON COMPUTING

One look at the savage face of a C> prompt is enough to drive any consumer away from home computers. It's irritating, inscrutable, and seemingly insurmountable. But we're making progress. In a few more years we're likely to see less and less of the DOS prompt, which will suit some of us just fine—provided we don't have to sacrifice too much to get there.

Other personal computer makers—Apple, Commodore, Atari—learned early and learned well that computers are anything but simple. To attract users, to further what was believed to be a latent information revolution, manufacturers of those systems conceal the workings of the machine behind a graphical user interface (GUI), an invisible hand that guides users along the path of computing, informing and insulating them from what they need not know.

A GUI makes computing easier for some users, harder for others. Maybe you think that searching folders is easier than scanning a directory of filenames, that dragging an item to a trash can is easier than remembering what Delete does, that moving through an open door is simpler than typing *exit*.

One point that can't be denied: A graphical interface invites a beginning user to sit down in front of the machine. That's an important function, one lost on many manufacturers who are so bent on selling power stations to the corporate elite that they forget that the biggest potential computer market in America is yet to be tapped—the home consumer.

But in the meantime, PC users suffer the growing pains of a steadily progressing GUI as parents suffer the agonies of their child's adolescence.

It's not easy. Almost every MS-DOS program requires an inordinate investment of time to learn. Only a few conventions apply across applications with any regularity—the F1 key summons help, for instance, and Ctrl-Q quits a program. (Or is it Alt-Q? Maybe Esc? You see what I mean.)

So what's the story? Why has it taken so long to give PC users a decent pathway from application to application, one that frees them from the command line and allows for effective integration? The short answer is no answer at all: It's just the nature of a huge, freewheeling market in which opposing forces battle for supremacy—or at least for a fat slice of the pie.

I wish that, five or six years ago, the major software companies had settled on a common set of navigational principles and had the forethought to incorporate those principles in a simple, text-based menu system. Nothing fancy, no cartoons, just a list of often-used tasks. We've got that now; a lot of MS-DOS productivity packages use the File-Edit-Option-Special header, with F10 or Alt-key combinations moving you to the menu bar. But we sure had to wait a long time. I'm not saying that applications have to look alike; I just ask that users be able to cut down their learning time and be able to expect specific functions from particular keypresses.

The latest GUI developments go far beyond delivering a functional interface to the PC. But most of them extract a price for doing so. *Windows*, Presentation Manager, and *NewWave* all require an unreasonable—for home computer users—hardware ante. Only *DeskMate* and *GEM* function well at the low end. (Another contender waits in the wings, one that promises to change drastically the face of home computing. Read about it on page 32.)

There's a reason for all this overhead. It's no longer enough for a GUI to provide pleasant isolation from the DOS command line. A GUI has to work hard and work well. It can't be just another pretty interface.

In these days of overpowered desktops, GUIs are working pretty hard, making up for what DOS and Intel have failed to provide, at least at the low end. Memory management, multitasking, task switching—all of these are handled by the latest GUIs because it's what we're asking from our machine. The software must support hardware that is growing more complex and difficult to use.

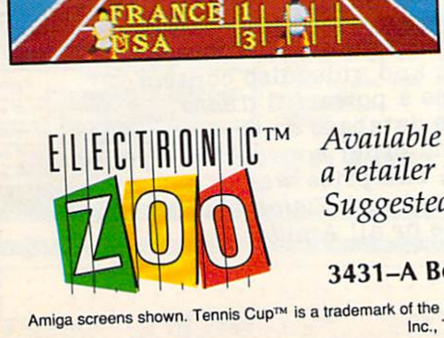
Step back from the world of personal computing for a moment and you see that it isn't a matter of making computing easier that fuels the movement toward graphical interfaces on the PC. The winner in the GUI wars won't necessarily be the company with the slickest, friendliest interface. The winner will be the developer who recognizes that the GUI is a bridge into a new era of computing, a world in which the keyboard is no longer the primary means of navigation.

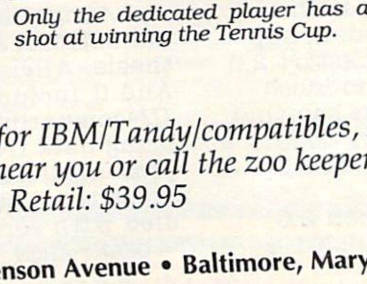
The potential role of the GUI is greater than the platform on which it serves. In ten years, the GUI may provide the link not just between people and their personal computer, but between people and video entertainment, between people and online information services, between people and their work. The infant technologies of today—CD-I, CD-ROM, HDTV, fiber optics—will be searching for the path of least resistance, a GUI that gracefully encompasses all technologies without sacrificing the power of any. A GUI that changes the face of computing.

It's match point in the finals and you're losing...

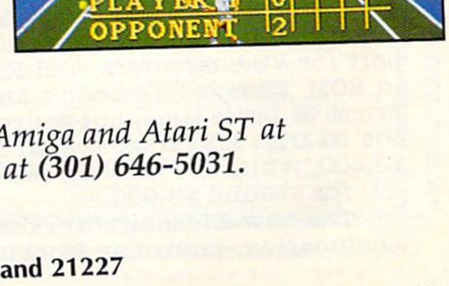
You're down Love-40 and must break the Australian's serve to survive. He blasts a fierce serve to your forehand. You return with a top spin drive to the crosscourt and rush the net. A lob soars toward the far corner, but you backpeddle and explode with an overhead for the point. Only four more to go...

- Hit top spin shots, lobs, deep volleys, overhead smashes and drop shots to any part of the court.
- Split-screen view for authentic real-time action on grass, clay, hard court or indoors.
- Play 32 seeded computer opponents, create your own challenger or compete with a friend.
- Doubles or singles play with practice modes for every shot, selectable game speed options and variable player skill levels.





Only the dedicated player has a shot at winning the Tennis Cup.



ELECTRONIC™
ZOO

Available for IBM/Tandy/compatibles, Amiga and Atari ST at a retailer near you or call the zoo keeper at **(301) 646-5031.**
Suggested Retail: $39.95

3431–A Benson Avenue • Baltimore, Maryland 21227

Amiga screens shown. Tennis Cup™ is a trademark of the Electronic Zoo Limited Partnership. IBM, Tandy, Amiga and Atari ST are trademarks of International Business Machines, Inc., Tandy Corp., Commodore-Amiga, Inc. and Atari Corp. respectively.

Circle Reader Service Number 110

NEWS & NOTES

WELCOME TO THE MACHINE

In late March, *COMPUTE!* examined a preproduction Amiga 3000, a new operating system, and an authoring system Commodore hopes will make the Amiga the best multimedia-platform value.

The most noticeable feature of the A3000 is its streamlined, low-profile case, a refreshing change from the boxy, industrial look of the A2000. As reported in our April issue, the power switch is on the front and the mouse and keyboard ports are on the side, allowing easy access to all three.

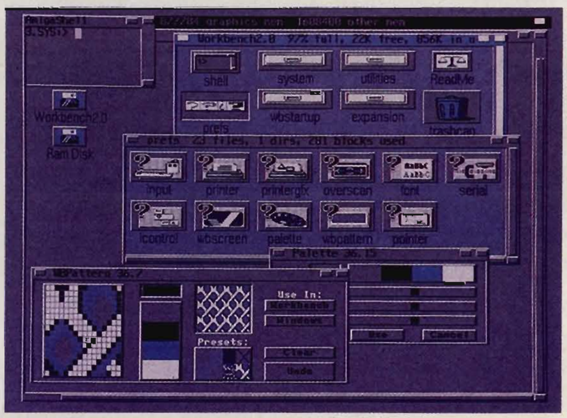
The A3000 has plenty of processing power, sporting a 25-MHz 68030 microprocessor and a 68882 math coprocessor. A lower-priced version with a 16-MHz 68030 and a 68881 coprocessor will also be available. The base A3000 ships with two megabytes of RAM and supports up to six megabytes on the motherboard (more when higher-density RAM chips become available); you can expand that to one gigabyte of RAM using the four Zorro III 32-bit expansion slots. It has a new 200-pin CPU expansion connector for adding cache memory or a 68040 or RISC processor. The A3000 also has an A2000-compatible video slot and two IBM AT-style slots for use with a Bridgeboard.

The A3000's upgraded Agnus chip will address up to two megabytes of graphics (CHIP) memory. The Denise coprocessor supports a number of new graphics resolutions, including a 1280-pixel-wide SuperHires mode. The new Amber chip eliminates interlace flicker and scan lines in all graphics modes.

Other new features include a built-in SCSI hard disk controller (all A3000s will ship with hard drives, starting with a 19-millisecond 40-megabyte model), support for VGA monitors, and Kickstart 2.0 in ROM. Commodore hadn't announced prices at press time, but sources say that the 16-MHz A3000 will retail for about $3,200, while the 25-MHz version will sell for around $3,900.

The new Kickstart/Workbench 2.0 combination, known as Workbench 1.4 during development, has a completely redesigned user interface with 3-D gadgets, new menu options, and a much-improved command line shell. New features include complete control over system fonts and Workbench screen resolution, support for the new Enhanced Chip Set graphics modes, and a set of hot-key utilities called the Commodities Exchange.

Kickstart/Workbench 2.0 will also be available in an Enhancer package for current Amiga owners. Although A1000 owners can't use the larger 512K Kickstart with an unexpanded machine, Commodore plans to support loading the new operating system into expansion RAM on that machine.



An early beta version of Workbench 2.0 shows the new 3-D gadgets and new user preferences tools.

Commodore's new authoring system, *AmigaVision,* is an icon-based programming tool that's ideal for creating presentations and visually oriented databases. You design *AmigaVision* programs by selecting icons and building an onscreen flowchart.

AmigaVision supports IFF graphics, animations, and sounds; speech synthesis; *ARexx;* and videodisc control. And it includes a powerful *dBase III*–compatible database so that you can bring data from other sources into your presentations. The price wasn't set at press time, but *AmigaVision* may be bundled with some or all Amigas. ▹

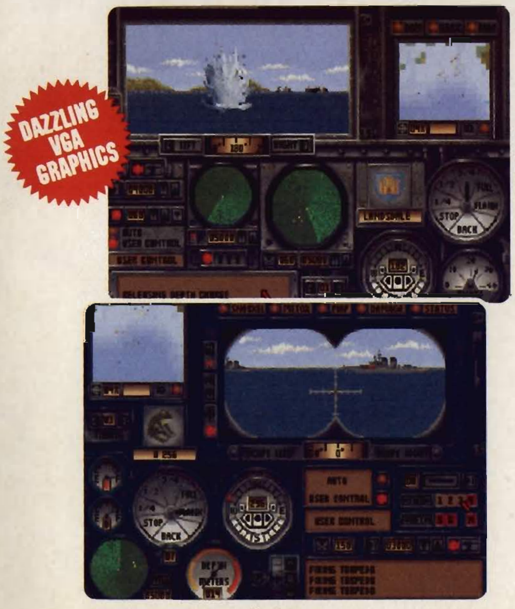
— DENNY ATKIN

WOLFPACK™

Introducing the two finest naval simulations in history.

WolfPack is as real as history's headlines. As a World War II Allied escort commander, you can match wits against a German U-boat commander... or switch roles and become the submarine commander. WolfPack is the first naval combat simulator that lets you command *either* side. So it's actually like getting two superb programs in one.

Whether you're commanding Allied destroyers or German U-boats, WolfPack provides an excitingly realistic simulation of World War II naval warfare; it comes with twelve authentic built-in scenarios, plus a construction set for creating original games.



Take command of an Allied destroyer or German submarine.

WOLF PACK
Brøderbund

Based on World War II tactics and ships

Operating in small groups called wolf packs, Admiral Karl Donitz's German U-boats sank more than 460 Allied ships in a single year at the start of World War II.

In late 1942, though, the tide began to turn. And ultimately, SONAR and RADAR breakthroughs gave the Allies undisputed control of the North Atlantic.

WolfPack takes you back to those historic years to experience all the excitement and tension of deadly naval combat.

- 256 color VGA support
- ADLib,™ Sound Blaster™ and Tandy® 3 Voice support
- Intuitive commands
- 12 built-in scenarios
- Mission construction set
- Variable skill levels
- One or two player modes

Brøderbund®

See your dealer or call Brøderbund at (800) 521-6263 to order. ©Copyright 1990 Brøderbund Software, Inc., 17 Paul Drive, San Rafael, CA 94903-2101. All Rights Reserved.

Special Sneak Preview Offer!

To receive a copy of the interactive WolfPack demo for your IBM PC or compatible, drop this coupon in the mail with a check or money order for $3.50 to cover postage and handling.

Mail this coupon and payment to:

WOLFPACK PREVIEW
BRØDERBUND SOFTWARE-DIRECT
P.O. BOX 12947, SAN RAFAEL, CA 94903-2974

NAME ____ AGE ____
AREA CODE ____ PHONE NO. ____
ADDRESS ____
CITY ____ STATE ____ ZIP ____

Check one:

3.5" disk ☐ 5.25" ☐ 5.25" (1.2 Meg) ☐
If 5.25" specify: VGA ☐ EGA or lower ☐

All demos require 512K of memory.
Canadian residents please add $1.50 for additional postage.
Allow 4 to 6 weeks for delivery. Offer expires 12/31/90. Valid only in continental U.S. and Canada. Void where prohibited.

30JCT

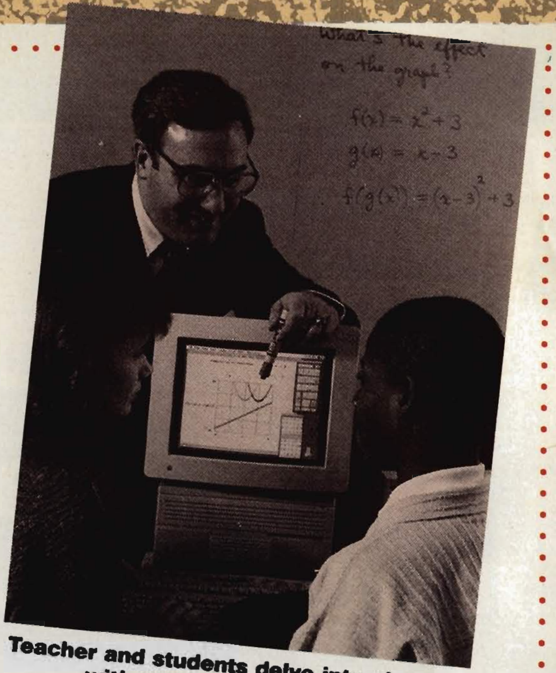
IBM
TOP SECRET
®

MYSTERY PS/2

A new IBM PS/2 has been seen lurking around the software-compatibility test labs of a major PC software company. Code-named the Model PS/XXXX, this 80286 machine reportedly has VGA graphics, digitized sound support, MIDI ports, 1 megabyte of RAM, a 20-megabyte hard disk, and a 2400-baud internal modem. *Microsoft Works* and Prodigy software are included, as is a simple DOS shell program.

According to informed sources, the system unit resembles the Mac-like PS/2 Model 25, but with a separate monitor. Expansion cards are added in an optional card cage that slides onto the top of the system unit. The retail price for the system, which includes a mouse, is reportedly set at around $1,400.

— DENNY ATKIN


What's the effect on the graph?
f(x) = x² + 3
g(x) = x − 3
f(g(x)) = (x − 3)² + 3

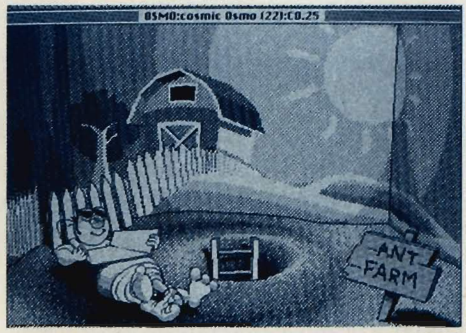
Teacher and students delve into algebra with the help of *MathCAD*.

RAD CAD

MathSoft of Cambridge, Massachusetts, has donated $3 million worth of its *MathCAD* software and other instructional materials to 180 high schools across the country as part of its Math Is Radical program. Designed to improve mathematics instruction and performance, the program offers students a chance to win $500 in a problem-solving contest.

— MIKE HUDNALL

GIVE US MORE



Here's a scene from *Cosmic Osmo* for CD-ROM.

Tired of games that take up only a megabyte or two on your hard drive? Try Activision's *Cosmic Osmo* for CD-ROM. It has over 100 megabytes of code and music, simulated 3-D graphics, animated characters with digitized voices, and an original, synchronized soundtrack. It even has games within other games, including a simulated coin-op arcade machine that players can modify with simulated ROM chips to create additional games and arcade sequences. *Cosmic Osmo* for CD-ROM costs $79.95 and will run on any CD-ROM-equipped Macintosh with at least one megabyte of RAM.

— DAVID ENGLISH

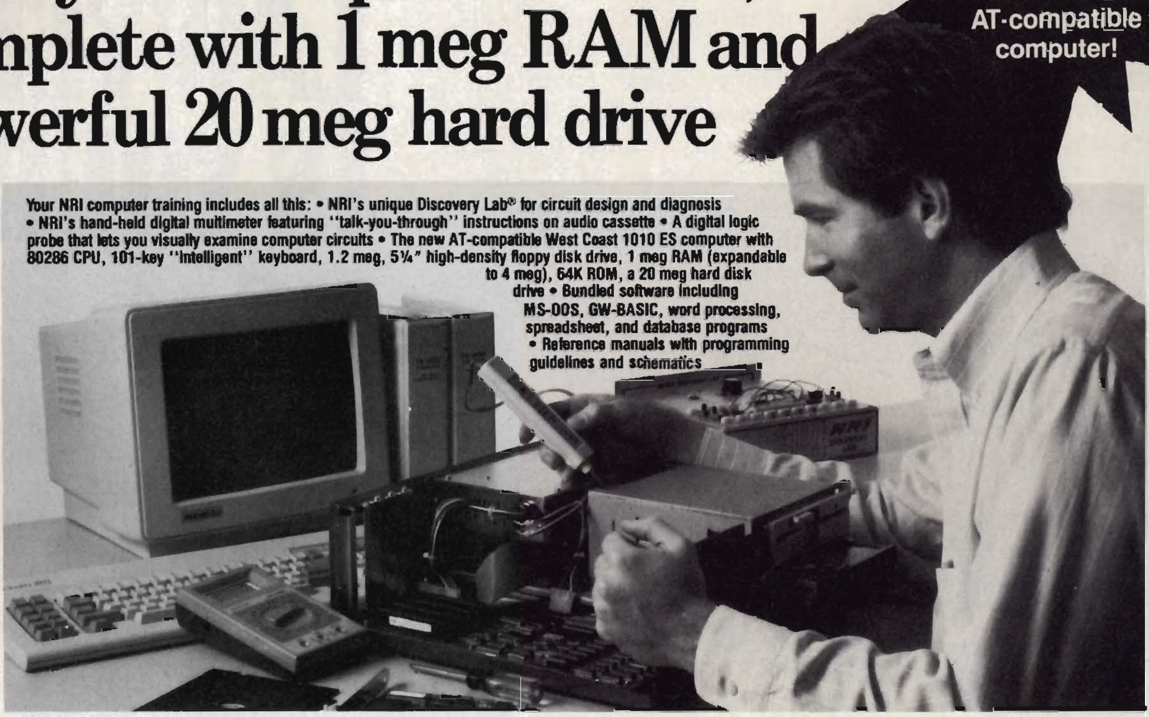
AST IN USSR

AST Computers displayed its high-performance personal computer systems in February at 15 technology demonstration centers throughout the USSR. The company has also developed a Russian-speaking sales and marketing group to promote AST products. According to Dataquest, a San Jose–based research firm, the Soviets have fewer than 200,000 PCs but have called for 28 million by the year 2000. ▹

— MIKE HUDNALL

Learn to troubleshoot and service today's computer systems as you build a fully AT-compatible micro, complete with 1 meg RAM and powerful 20 meg hard drive

NEW!
Now includes
AT-compatible
computer!



Your NRI computer training includes all this: • NRI's unique Discovery Lab® for circuit design and diagnosis • NRI's hand-held digital multimeter featuring "talk-you-through" instructions on audio cassette • A digital logic probe that lets you visually examine computer circuits • The new AT-compatible West Coast 1010 ES computer with 80286 CPU, 101-key "intelligent" keyboard, 1.2 meg, 5¼" high-density floppy disk drive, 1 meg RAM (expandable to 4 meg), 64K ROM, a 20 meg hard disk drive • Bundled software including MS-DOS, GW-BASIC, word processing, spreadsheet, and database programs • Reference manuals with programming guidelines and schematics

Train the NRI Way—and Earn Good Money Servicing Any Brand of Computer

Jobs for computer service technicians will almost double in the next 10 years according to Department of Labor statistics, making computer service one of the top 10 growth fields in the nation.

Now you can cash in on this exciting opportunity—either as a full-time industry technician or in a computer service business of your own—once you've mastered electronics and computers the NRI way.

NRI's practical combination of "reason-why" theory and hands-on building skills starts you with the fundamentals of electronics, then guides you through more sophisticated circuitry all the way up to the latest advances in computer technology. You even learn to program in BASIC and machine language, the essential language for troubleshooting and repair.

Get Real-World Skills as You Train With a Powerful AT-Compatible Micro—Now With 20 Meg Hard Drive!

To give you hands-on training with the absolute in state-of-the-art computer technology, NRI includes the powerful new West Coast 1010 ES computer as the centerpiece of your training. As you assemble this fully IBM AT-compatible micro from the keyboard up, you actually see for yourself how every section of your computer works.

You assemble and test your computer's "intelligent" keyboard, install the power supply and 1.2 meg, 5¼" floppy disk drive, then interface the high-resolution monitor. But that's not all.

Your hands-on training continues as you install a powerful 20 megabyte hard disk drive—today's most-wanted computer peripheral—now included in your course to dramatically increase the data storage capacity of your computer while giving you lightning-quick data access. Plus you work with exclusive word processing, database, and spreadsheet software, yours to use for your own professional and personal applications.

As you build your computer, performing key demonstrations and experiments at each stage of assembly, you get the confidence-building, real-world experience you need to work with, troubleshoot, and service today's most widely used computer systems.

No Experience Needed, NRI Builds It In

This is the kind of practical, hands-on experience that makes you uniquely prepared to take advantage of today's opportunities in computer service. You learn at your own convenience in your own home.

No classroom pressures, no night school, no need to quit your present job until you're ready to make your move. And all throughout your training, you've got the full support of your personal NRI instructor and the NRI technical staff, always ready to answer your questions and help you whenever you need it.

FREE 100-Page Catalog Tells More

Send today for NRI's big, 100-page, full-color catalog that describes every aspect of NRI's innovative computer training, as well as hands-on training in robotics, video/audio servicing, electronic music technology, security electronics, telecommunications, and other growing high-tech career fields. If the coupon is missing, write to: NRI School of Electronics, McGraw-Hill Continuing Education Center, 4401 Connecticut Avenue, NW, Washington, DC 20008.

IBM and AT are registered trademarks of International Business Machines Corporation

SEND COUPON TODAY FOR FREE NRI CATALOG!

NRI

McGraw-Hill Continuing Education Center
4401 Connecticut Avenue, NW, Washington, DC 20008

For Career courses approved under GI Bill
☐ check for details.

☑ **CHECK ONE FREE CATALOG ONLY**
☐ **Computers & Microprocessors**
☐ TV/Video/Audio Servicing
☐ Robotics
☐ Electronic Music Technology
☐ Security Electronics
☐ Digital Electronics Servicing
☐ Electronic Circuit Design
☐ Computer Programming
☐ Telecommunications
☐ Basic Electronics
☐ Bookkeeping and Accounting
☐ Building Construction
☐ Automotive Servicing
☐ Air Conditioning, Heating & Refrigeration
☐ Small Engine Repair
☐ Electrician
☐ Locksmithing
☐ Travel Careers
☐ Writing
☐ Paralegal

Name (Please print) Age

Street

City/State/Zip

We'll give you tomorrow.

Accredited Member, National Home Study Council 198-060

MONITOR FROM YOUR MONITOR

When kids at the Bainbridge/Guilford High School in upstate New York tell their parents that they don't have any homework, they had better be telling the truth. Seneca Computer Systems of Geneva, New York, has designed a system that allows parents to check up on school assignments and upcoming events. Parents can also leave a message or, using a code, check up on their child's progress. Planned enhancements to the system include the capability to automatically call the homes of absentees—a truant officer for the Information Age.

— MIKE HUDNALL

ONE-YEAR
WARRANTY

APPLE POLISHES WARRANTY

Responding to long-standing criticism of its 90-day warranty period, Apple announced in May that all Apple hardware products sold after January 1, 1990, will be covered by a one-year limited warranty.

As an introductory promotion, owners of Apple computers purchased before January 1 can purchase a one-year AppleCare extended warranty contract for the price of the six-month plan. That offer is good only through May 31, 1990.

— DENNY ATKIN

IT'S ALIVE!

A computer model designed to simulate a part of the human brain has unexpectedly produced—on its own—electrical waves like those found in the brain. Using an IBM supercomputer, IBM scientist Roger Traub and Columbia University researchers Richard Miles and Robert Wong were attempting to understand the origin of epileptic seizures. No one understands how these waves are generated—either by the supercomputer model or the brain.

— DAVID ENGLISH

A LAWYER IN YOUR PC

The next time you have to draft a lease, you might not need to call your lawyer; just boot your PC. *Hyatt Legal Services HOME LAWYER* will create up to 16 legal documents, including a bill of sale, promissory note, residential lease, general power of attorney, and last will and testament.

To assemble a legal document, you select the appropriate type of document from the main menu and answer a series of questions. The program then generates a file that can be printed to the screen, a printer, or to disk for exporting into a word processor.

"This software program will help people in their daily lives," says Joel Hyatt, senior partner of Hyatt Legal Services. "Whether it's selling a car, renting an apartment, or providing authority for medical attention for your child, important transactions should be in writing to protect one's rights."

Hyatt gained national attention when he successfully argued in front of the Ohio Supreme Court in favor of allowing law firms to advertise on television. *HOME LAWYER* is the product of a joint venture between Hyatt's firm, OverDrive Systems, MECA Ventures, and Egghead Discount Software; it retails for $119.95.

— DENNY ATKIN

COMPUTE!

THE CHOICE OF HOME PC ENTHUSIASTS SINCE 1979

Editor	Peter Scisco
Senior Art Director	Janice R. Fary
Features Editor	Keith Ferrell
Assistant Editors	Denny Atkin David English Michael Hudnall
Manager, Disk Products	David Hensley, Jr.
Programming Manager	Richard C. Leinecker
Assistant Features Editor	Tom Netsel
Editorial Assistants	Elizabeth Casey Mickey McLean
Copy Editors	Karen Siepak Karen Uhlendorf
Contributing Editor	David Thornburg
ART DEPARTMENT	
Assistant Art Director	Robin L. Strelow
Mechanical Art Supervisor	Robin Case
Junior Designers	Scotty Billings Meg McArn
PRODUCTION DEPARTMENT	
Production Director	Mark E. Hillyer
Assistant Production Manager	De Potter
Production Assistant	Barbara A. Williams
Typesetting	Terry Cash Carole Dunton
Advertising/Production Assistant	Tammie Taylor
ADMINISTRATIVE STAFF	
Executive Assistant	Sybil Agee
Senior Administrative Assistant	Julia Fleming
Administrative Assistant	Linda Benson
Customer Service Coordinator	Elfreda Chavis
COMPUTE! PUBLICATIONS	
Group Vice President, Publisher/Editorial Director	William Tynan
Associate Publisher/Editorial	Lance Elko
Associate Publisher/Advertising	Bernard J. Theobald, Jr.
Managing Editor	Kathleen Martinek
Editorial Operations Director	Tony Roberts
Editorial Marketing Manager	Caroline D. Hanlon
Advertising Marketing Manager	Kathleen Ingram
ABC CONSUMER MAGAZINES, INC.	
President	Gary R. Ingersoll
Senior Vice President	Richard D. Bay
Director, Financial Analysis	Andrew D. Landis
Director of Circulation	Harold Buckley
CIRCULATION DEPARTMENT	
Subscriptions	Jeanne Andrews Maureen Buckley Jenny Lam Raymond Ward
Newsstand	Peter J. Birmingham Jana Friedman
Customer Service	**(800) 727-6937**

ABC Consumer Magazines, Inc., Chilton Company,
One of the ABC Publishing Companies,
a part of Capital Cities/ABC, Inc.

Robert G. Burton, President
825 Seventh Avenue
New York, NY 10019

ADVERTISING OFFICES

New York: ABC Consumer Magazines, Inc., 825 Seventh Ave., New York, NY 10019. Bernard J. Theobald, Jr., Associate Publisher/Advertising, (201) 989-7553. (201) 989-7554 FAX.

Greensboro: COMPUTE! Publications, 324 West Wendover Ave., Suite 200, Greensboro, NC 27408; (919) 275-9809. Kathleen Ingram, Marketing Manager.

New England & Mid-Atlantic: Bernard J. Theobald, Jr. (201) 989-7553. Kathleen Ingram (919) 275-9809.

Midwest: Standard Display and Full-Page Mail-Order Ads—Starr Lane, National Accounts Manager, 1025 Crescent Blvd., Glen-Ellyn, IL 60137; (708) 790-0171.

Midwest: Fractional Mail-Order Ads—Lucille Dennis (312) 726-6047 [Chicago]; (713) 731-2605 [Texas]; (303) 595-9299 [Colorado]; (415) 248-8222 [California]; 1290 Howard Ave., Suite 303, Burlingame, CA 94010; 708) 790-0171.

Southwest: Rick Rosner, Western Accounts Manager, (213) 649-4100; 5757 W. Century Blvd., Suite 270, Los Angeles, CA 90045; (708) 790-0171.

Northwest: Jerry Thompson, Lucille Dennis (312) 726-6047 [Chicago]; (713) 731-2605 [Texas]; (303) 595-9299 [Colorado]; (415) 248-8222 [California]; (708) 790-0171.

Southeast & International: Bernard J. Theobald, Jr. (201) 989-7553; Kathleen Ingram (919) 275-9809.

Address all advertising materials to Tammie Taylor, COMPUTE! Publications, Inc., 324 West Wendover Ave., Suite 200, Greensboro, NC 27408.

Editorial inquiries should be addressed to The Editor, COMPUTE!, Suite 200, 324 West Wendover Ave., Greensboro, NC 27408.

PRINTED IN THE U.S.A.

The Audit Bureau

LETTERS

Sanyo Sources

In your February issue, Leonard Harris inquired about using the NEC V20 chip in his Sanyo MBC 550. The pros and cons of using this chip have been discussed on numerous occasions in the Sanyo PC Hackers newsletter, available from Sanyo PC Hackers International, 12450 Skyline Boulevard, Woodside, California 94062.

I'm not a hacker by any definition, but, owning a Sanyo, I find it essential to spend the $20 for a subscription each year. The monthly newsletter has 16–18 pages in each issue packed full of information, the club has a large freely distributable software library with disks available for $4 each, and the editor, Victor R. Frank, goes to unbelievable lengths to solve members' problems.

VILLY DIERNISSE
WESTWOOD, NJ

We also received a letter from Leonard V. Witbeck of Santa Cruz, California, who informs us that he's been successfully using V20 processors in his two Sanyo MBC 555 computers. Mr. Witbeck warns that the Sanyo Format and DiskCopy commands don't work properly with the V20, but he says replacement commands called VFormat and VDskCopy are available from Sanyo PC Hackers International.

Ground Disk Drives

Prior to reading Denny Atkin's "Amiga Specific" column in the March issue of *COMPUTE!*, I had never given any thought to the sounds the disk drive makes when I am using Electronic Arts *F-16 Combat Pilot*. After reading his comment about "drive-grinding disk-based copy protection," I became concerned.

I wanted to know if long-term use of the program could be detrimental to my disk drive, so I called Electronic Arts and also talked to a local computer store that repairs Amigas. The persons I talked to at both places told me that the copy protection used in *F-16 Combat Pilot* is harder on a drive than an unprotected program. The EA representative couldn't provide any information on whether or not long-term use was bad for the disk drive. I would appreciate hearing your opinion. I enjoy *F-16 Combat Pilot*, but not enough to mess up a disk drive using it.

ALEX HANNIBAL
SAN ANTONIO, TX

Denny Atkin responds:
The term drive grinding *comes from the noises created by early Commodore 64 copy-protection schemes, which would bang the disk drive's read/write heads against the head stop while reading copy-protected tracks. After using such software for a period of time, you would usually have to take your C64 in for a head alignment.*

When I loaded F-16 Combat Pilot *on both an Amiga 1000 and an A2000, I could hear the head rattling against the stop. While the Amiga's disk drives aren't nearly as susceptible to misalignment problems as the C64's, sustained use of a number of programs utilizing such protection schemes can cause problems. While a drive alignment usually costs less than $100, most Amiga owners at COMPUTE! avoid such programs by choosing alternatives such as Spectrum HoloByte's* Falcon *and EA's own* Interceptor, *which don't have severe disk-based copy protection.*

Correction

The makers of LogoWriter, *reviewed in our February issue, have moved. The new address is Logo Computer Systems, 3300 Cote Vertu, Suite 201, Montreal, Quebec, Canada H4R 2B7; (800) 321-5646.*

Do you have comments or questions? Send your letter, along with your name, address, and daytime telephone number, to COMPUTE! Feedback, P.O. Box 5406, Greensboro, North Carolina 27403. ◘

COMPUTE! SPECIFIC

MS-DOS

TSRs are great. They're always lurking in your PC's memory, waiting to be called into action. But there's a price you pay for each TSR and that price is RAM. Each TSR uses a precious chunk of your PC's 640K of conventional memory. For example, my favorite—*PC Tools Deluxe Desktop*—uses 42K of RAM. Many TSRs use much more.

Enter Chip Rabinowitz, creator of *The Swap Utilities* (Innovative Data Concepts, 1657 The Fairways, Suite 101, Jenkintown, Pennsylvania 19046; 215-884-3373; shareware—$25 for the first utility, $20 for each additional utility). *The Swap Utilities* are programs that dramatically reduce the memory requirements of supported TSRs, in most cases to 7K or a little less.

The Swap Utilities currently include programs for swapping *PC Tools Deluxe Shell, PCTools Deluxe Desktop, The Norton Guides, MemoryMate, SideKick, SideKick Plus, Lotus Metro, Lotus Express*, and *Tornado Notes*. Chip says other packages are in the works.

The Swap Utilities reduce a TSR's RAM requirements by swapping the program code from conventional memory to either your hard disk, expanded memory, or extended memory (configured either as XMS or a ramdisk). This can make calling your TSR slower, but, in many cases, you won't recognize a difference.

If you swap to a hard disk, every time you press your TSR's hot key, it takes a second or so longer to pop onto your screen. But swapping to disk is the worst case. If you swap to memory (expanded or extended), the swap time is just a few milliseconds, not even enough to notice.

One other minor drawback: *The Swap Utilities* don't always support all of a program's features. For example, with *PC Tools Desktop*, you lose alarms as well as macros active outside *Desktop*. Chip is working on this, and the next release should incorporate both features into the program's swapped version.

In the last few months, I've used *The Swap Utilities* with *PC Tools Desktop* on three different systems, either swapping to disk or an extended-memory ramdisk, and the program performs flawlessly. If you use any of the TSRs supported by *The Swap Utilities*, try it. You can't go wrong.

Finally! *CIM*

With *CIM—CompuServe Information Manager*—the country's largest online service is now among the friendliest.

Installing *CIM* is a breeze. Simply supply your communications settings, your CompuServe access number, and your password (the program encrypts this and never displays it on any CompuServe screen).

When you run the program, you'll see a desktop with movable windows and a menu bar across the top of the screen. Navigate the program's pull-down menus and windows with keystrokes or a mouse (there are also shortcut keys for some selections).

One of *CIM*'s most welcome features is its mail handling. You can compose multiple EasyPlex messages offline and upload them with a keystroke or mouse click. Here's how it works.

First, tell *CIM* you want to create mail. The program opens its dedicated mail editor with fill-in-the-blank fields for To and User ID. If you click or press Enter on the To field, *CIM* displays the entries in your address book. Choose the addressee, type in a subject, and you're ready to compose your text.

The editor has word-wrap and most of the basic features you'll need. After you've finished with your letter, you can send it, file it, or store it in your out basket. You can compose several letters this way, storing each in your out basket. When you've finished writing, simply click on the Send button and *CIM* connects to CompuServe and uploads all your mail.

You can download mail just as easily. Select Get New Mail from the mail menu and the program connects with CompuServe, goes to EasyPlex, displays all your mail and gives you the option to read, download a particular letter, or download all letters. CompuServe mail was never easier.

CIM makes using CompuServe's forums just as easy as using EasyPlex mail. *CIM* maintains a list of your favorite places. When you select one—the IBM Applications Forum, for example—the program connects with CompuServe and spirits you to that forum.

Once at the forum, you can read messages and browse files just the way you always could, but *CIM*'s pull-down menus make navigation much easier. (If you're not a member of a forum, with *CIM*, joining is even simpler than it used to be.)

There is excellent support for forum libraries, too. Searching for files is fast and easy, and you can tag files for batch downloading—a great feature. And since *CIM* uses CompuServe's B protocol for all communications (including downloading), transfers are fast.

CompuServe has opened a *CIM* forum for questions and answers about the program. This service is free, so, after you've gotten your *CIM* feet wet, check it out.

There isn't much of a downside to *CIM*, but a few things bear mentioning. First, the program beeps at you constantly. This "feature" is going to be repaired in upcoming releases, according to CompuServe. And you can't change the program's colors (the defaults are OK, but it's always better to have options). And

SHRINKING TSR
MEGA FUN
SPELLING WELL
TRIP MAPPING
FALLING PRICES

CIM is something of a memory hog. It requires 470K and works best with more—640K is recommended.

But these are minor reservations. If you use CompuServe, *CIM* is a must. And at $24.95 to subscribers, which includes $15.00 of connect time (go online and type GO ORDER at any prompt), or $39.95 for new subscribers, which includes a user's guide and $25.00 of connect time (call 800-848-8199), it's one of the best buys in telecommunications.

Shootout in Texas

If you spell *laptop* T-o-s-h-i-b-a, you're not alone. In the last few years, Toshiba has produced a line of laptops that have put the company's sales at the top.

Recently, however, Toshiba had a surprise from Houston-based Compaq. That company announced the LTE (an 8086-based machine) and the LTE/286, two notebook computers with hard disks.

These machines caused such a stir that some people started to spell *laptop* C-o-m-p-a-q. Toshiba didn't take this challenge lying down. It met the Compaq threat by introducing two machines to compete head to head with the LTE and the LTE/286.

Rather than announce the new machines at a traditional press conference, Toshiba footed the bill to fly a gaggle of editors from every major computer magazine to Houston, Texas, (Compaq's home turf) for a lavish introduction of the machines. This event, called the Toshiba Challenge, was held this past February in Houston's posh Four Seasons on the Park Hotel.

Toshiba's new offerings are the 1000XE, an 8086 notebook computer with a suggested retail of $2,699, and the 1200XE, a 286-based machine with a $3,999 price. Both machines have 20MB hard drives.

The 1000XE weighs in at an amazing 6.2 pounds, but there's a hitch: There's no floppy drive. *Laplink III* is in ROM, however, and an external 1.44MB drive is available for $249. The machine boots MS-DOS 3.3 from ROM and comes with 1MB of RAM (expandable to 3MB).

The 1200XE's 286 CPU runs at 12 MHz, boasts a 25-ms 20MB hard drive and a 1.44MB floppy, and weighs 7.9 pounds. The 1200XE comes with MS-DOS 4.01 and 1MB of RAM (expandable to 5MB). Both machines sport backlit supertwist LCD screens with crisp double-scan CGA (640 × 400) resolution.

Since the main competition is between the 1200XE and the LTE/286, the big question is how do these machines compare? The two computers are about the same size (the LTE is a little smaller), but the Toshiba has a larger, sharper screen. The Toshiba's keyboard has a better layout than the Compaq's, but I preferred the feel of the Compaq. No one from Toshiba talked much about battery life, but the Compaq has the Toshiba beat cold in that arena: The LTE has a three-hour battery life compared with the Toshiba's 1½-hour charge.

Who's the winner? Hopefully, consumers. The Toshiba machines are aggressively priced, and this may force Compaq to lower its prices, making the LTE and LTE/286 more affordable. And Toshiba may respond with its own cuts.
— *Clifton Karnes*

64/128

By the time you read this, *The Game of Harmony* (Accolade, 55 South Winchester Boulevard, Suite 200, San Jose, California 95128; $29.95) will be available for the 64/128. Harmony works on the principle that it might be fun to build with arcade skills rather than to destroy. So *Harmony* represents something of a bold move, especially since many gamers see joysticks and fire buttons as instruments of destruction.

In *Harmony*, you maneuver a spinning orb around the screen. With this sphere, you try to get a host of other orbs of various colors to join together before they explode. You have between 10 and 30 seconds to get all orbs to merge into one harmonious whole.

In mantra mode, you prac-

TALK TO YOUR COMPUTER

WITH VOICE MASTER KEY® FOR PCs/COMPATIBLES

VOICE RECOGNITION WITH SPEECH RESPONSE

GIVE A NEW DIMENSION TO PERSONAL COMPUTING The amazing Voice Master Key System adds voice recognition to just about any program or application. Voice command up to 256 keyboard macros from within CAD, DTP, word processing, spread sheet, or game programs. Fully TSR and occupies less than 64K. Instant response time and high recognition accuracy. A real productivity enhancer!

SPEECH RECORDING SOFTWARE Digitally record your own speech, sound, or music to put into your own software programs. Software provides sampling rate variations, graphics-based editing, and data compression utilities. Create software sound files, voice memos, more. Send voice mail through LANs or modem. A superior speech/sound development tool.

INTERACTIVE SPEECH INPUT/OUTPUT Tag your own digitized speech files to voice recognition macros. Provides speech response to your spoken commands -- all from within your application software! Ideal for business, presentation, education, or entertainment programs you currently use. Augment the system for wireless uses in robotics, factory process controls, home automation, new products, etc. Voice Master Key System does it all!

EVERYTHING INCLUDED Voice Master Key System consists of a plug-in card, durable lightweight microphone headset, software, and manual. Card fits any available slot. External ports consist of mic inputs and volume controlled output sockets. High quality throughout, easy and fun to use.

ONLY $149.95 COMPLETE

ORDER HOTLINE: (503) 342-1271 Monday-Friday 8 AM to 5 PM Pacific Time. VISA/MasterCard phone or FAX orders accepted. No CODs. Personal checks subject to 3 week shipping delay. Specify computer type and disk format (3 1/2" or 5 1/4") when ordering. Add $5 shipping charge for delivery in USA and Canada. Foreign inquiries contact Covox for C & F quotes.

30 DAY MONEY BACK GUARANTEE IF NOT COMPLETELY SATISFIED.

CALL OR WRITE FOR FREE PRODUCT CATALOG.

COVOX INC.
675 CONGER ST.
EUGENE, OR 97402

TEL: (503) 342-1271
FAX: (503) 342-1283

Circle Reader Service Number 150

Thoroughbred•Greyhound•Trotter/Pacer
PROF. JONES INC.
4
1

"Highest rated handicapping software since 1983"

PROFESSIONAL HANDICAPPING SYSTEMS™

Available at your local software dealer or call for information and a FREE CATALOG.

1-800-553-2256

1940 W. State St., Boise, ID 83702

DEMO DISKS
$5.00
(refundable)

Football•Baseball•Basketball•Lottery

Circle Reader Service Number 116

tice the various levels without time restrictions. Furthermore, the computer generates the musical score as you play, which means you should rarely hear the same tune twice.

The Game of Harmony seems to be truly a game for New Age enthusiasts. Whether or not such a genre presages the *Zeitgeist* of the 1990s remains to be seen, but any change in arcade-land's tired format is extremely welcome.

Hockey Pick

Hockey has never been a particularly successful sport in the U.S., but it has inspired a number of pretty good computer simulations. *Wayne Gretzky Hockey* probably won't see 64/128 format (it's for Amiga and MS-DOS only), but several other titles have. The most successful has been *Superstar Ice Hockey* (Mindscape), but more recently Electronic Arts' *Power Play* has garnered some enthusiasm as well. Now comes *FaceOff!* (Gamestar, 3885 Bohannon Drive, Menlo Park, California 94025; $29.95), a real slapshot to the net.

Graphically, *FaceOff!* is helmet and shoulder pads above any other 64/128 hockey game. The players look as if they're skating and shooting, the goalies do splits to make saves, and passes appear to be headed in the right area for the receiver to track them down. If you wish, as you close in on the net, you can switch to a closeup of the shooter and the goalie, controlling the direction of the puck as it moves toward the net; and this action, too, is graphically well rendered.

Unfortunately, an unrealistic emphasis on fighting flaws this game. The shooter-goalie closeup, while fun and attractive, is highly atypical of actual hockey. Not even on penalty shots does this kind of action occur, and the whole style of confrontation seems much closer to a pitcher-versus-batter baseball scene than anything that would happen in the NHL.

FaceOff! perpetuates the gross misperception that hockey is all about fighting. The manual begins with the tired cliché "I went to the fights and a hockey game broke out," and the gameplay proceeds to bear out this idea. Far too often, play stops as two players battle it out skate to skate.

Yes, fighting occurs in hockey, but three things are wrong with *FaceOff!*'s approach. First, fighting isn't nearly this frequent. Second, players don't square off, like boxers, standing up straight and punching each other. Third, nobody wins a hockey fight; both players end up in the penalty box. In *FaceOff!*, the player who loses the fight ends up with the penalty, while the winner gets off scot-free. This is ridiculous.

Mega Fun

Virgin Mastertronic (18001 Cowan, Irvine, California 92714) has just released *Mega Pack*, a collection of ten arcade hits of the past. Actually, not all were hits, but all of these games are of a fairly high to very high quality. With a ten-in-one package, you're not likely to go wrong, and if you like all ten, this is a good deal ($34.99) of major proportions.

The gem of the bunch is *Trailblazer*, a high-speed 3-D game in which you bounce a soccerlike ball over hurdles on your way to the finish line. Its cousin *Cosmic Causeway* is almost as strong but suffers from a curious sameness after prolonged play. *Bulldog, Jack the Nipper II, Rebounder, Monty on the Run,* and *Future Knight* make up some of the rest of this package.

With the 64's rich gaming past, collections like *Mega Pack* could become more common. Many older games compare favorably with new ones; their excellence and flaws reflect the enthusiasm of amateurs, and they represent, in many ways, a kind of golden age.

— Neil Randall

APPLE II

In the wake of recent pruning of Apple's orchard, questions are continuing to surround the Apple II line. It's still a mystery to all of us outside Cupertino (and maybe to many inside as well).

There's plenty of talk about a less expensive color Macintosh that would be able to run Apple II software, one that the company will launch into the home and educational market. To maintain compatibility with the tens of thousands of Apple II programs, options reportedly range all the way from on-board emulation to an internal plug-in board that will allow Macs to run Apple II software.

The future of the Apple IIe, IIc+, and IIGS? Hard to tell. It has been clear for some time, though, that Apple doesn't have any interest in selling the machines, since the company hasn't produced a significant marketing campaign for the line in over a year.

Jammin'

Do you ever dream of playing guitar with Eric Clapton? Do you fantasize about backing up k. d. lang in front of thousands? Want to tickle the ivories in the best blues bar in Chicago?

Everyone can dream of making music, but the hard, cold truth is that few of us can even make it through the "Star Spangled Banner." Now, though, there's a piece of software for those of us who dare sing only as accompaniment to Neil Young tunes. For us, Brøderbund's *Jam Session* is simply the best Apple IIGS music program around.

First released on the Macintosh, *Jam Session* has finally made it to the machine that it was really made for—the 15-voice sound-chip-equipped Apple IIGS. *Jam Session* has made the transition to the IIGS with ease and, in fact, is a much better program in color and with the Apple's fuller sound.

Jam Session lets you choose from 20 songs in five categories. Load the song from disk and get your fingers ready. As the animated band or musician plays a background rhythm or melody, you press any of the number or letter keys on the keyboard. Any key you press is fine—*Jam Session* doesn't let you make a sour note. Pound away on the keys, dally over them slowly, it doesn't matter. You'll make good music all the time.

You can really get wild with *Jam Session*. Try out the classical piano session, for instance, and with a few riffs on the keyboard, you'll wake up even the deadheads in the back of the audience. Smash keys while the fifties rock-'n'-roll band plays, and you'll sound like a latter-day Little Richard at high speed.

It takes absolutely no musical skill to play *Jam Session*. I know: I don't have any. But if *you* do—or even if you don't, but want to save your licks for posterity—you can easily record your sessions with the program's Record feature. And if you know how to read music, you can edit your own riffs.

Jam Session's manual clearly describes how to connect your Apple IIGS to external headphones, speakers, portable tape players, or stereo receivers. If you can, use one of these to amplify the music—the IIGS internal speaker is too small. *Jam Session* also works with IIGS stereo cards.

Jam Session costs about the same as two concert tickets—$49.95. For more information, contact Brøderbund at 17 Paul Drive, San Rafael, California 94903; (415) 492-3500.

Spell Well

For a straightforward spelling drill-and-practice program, one with both feet on the ground but without any flashy graphics, take a look at *Spelling Rules*. Part of the Weekly Reader line from Optimum Resource (the Stickybear people), *Spelling Rules* is aimed at students in grades 3–6.

Using 21 general spelling rules of the English language, *Spelling Rules* offers up plenty of exercises to better kids' spelling. Help screens play a big part in the program. In an early lesson, for instance, a handy screen details the rules when the child is asked to create plurals. The screens clearly lay out the general rules while offering up an example or two.

Up to 39 children can use the program and maintain their places using the one disk, making *Spelling Rules* an excellent classroom program. Best of all, parents or teachers can put together a new lesson either to help an individual child or to emphasize another spelling rule to the class.

Spelling Rules won't make everyone a perfect speller, but with its emphasis on the rules, not the exceptions, it covers a lot of ground quickly. For more information, contact Optimum Resource, 10 Station Place,

MAY MADNESS

Go Nuts with Deep Discounts from SDA

We have what you're looking for!

Stock up on your favorite titles for the long summer ahead.

COSMI

TOP 10 SOLID GOLD

What-A-Deal! 10 of the most entertaining programs of all time for one low price. 100's of hours of arcade, adventure, sports, strategy & simulation fun.

Top 10 Solid Gold **SDA Discount Price $10.88**

ACCESS	
Crime Wave (w/sound)	$39
Mean Streets (w/sound)	$39
WCLB Golf (w/sound)	$35
ACCOLADE	
Balance of Power	$32
Bar Games	$29
Blue Angels Flight Sim.	$32
Cycles	$25
Day of the Viper	$32
Don't Go Alone	$25
4th & Inches Football	$14
Grand Prix Circuit	$25
Gunboat	$32
Hardball	$9.88
Hardball 2	$32
Harmony	Call
Heatwave Boat Racing	$25
Jack Nicklaus Golf	$32
J.N. Golf Champ Courses	$16
J.N. Golf Int'l Courses	$16
Steel Thunder	$25
Strike Aces	Call
Test Drive 2: The Duel	$32
T.D. 2: Calif. Scenery	$16
T.D. 2: Europe Scenery	$16
T.D. 2: Muscle Cars	$16
T.D. 2: Super Cars	$16
Third Courier	$32
ACTIVISION	
A-10: Tank Killer	$32
Battle Chess	$32
David Wolf Secret Agent	$32
Death Track	$29
Die Hard	$25
Dragon Wars	Call
Future Wars	Call
Ghost Busters 2	$29
Last Ninja	$14
Manhole (RQ: Hdrive)	$32
Mech Warrior	$32
Music Studio 3.0	$65
Neuromancer	$29
Power Drift	$25
Rampage	$24

Tongue of the Fatman	$25
ARTWORX	
Bridge 6.0	$25
Centerfold Squares	$19
Kaleidokubes	$19
Linkword Languages	Call
Strip Poker 2	$25
S. P. 2 Females #1	$14
S. P. 2 Female/Male #2	$14
S. P. 2 Females #3	$14
BETHESDA	
Wayne Gretzky Hockey	$35
BOX OFFICE	
Elvira's Personal Nitemare	$32
BRITANNICA/DESIGNWARE	
Archipelagos	$25
Designasaurus	$25
BRODERBUND	
Ancient Art of War at Sea	$29
Banner Mania	$23
Carmen S.D. - Europe	$32
Carmen S.D. - Time	$32
Carmen S.D. - U.S.A.	$32
Carmen S.D. - World	$32
If It Moves Shoot It	$19
Jet Fighter: Adventure	$32
Murder Club	$25
Omni-Play Basketball	$32
Omni-Play Horse Racing	$32
New Printshop	$39
P.S. Sampler Graphics	$23
P.S. Party Graphics	$23
P.S. School/Business Gr	$23
Playroom	$29
Sim City	$32
Sim City Terrain	$14
Sky Chase	Call
VCR Companion	$32
Wings of Fury	Call
CINEMAWARE	
Deathbringer	$26
Krystal	$32
Three Stooges	$32
TV Sports Football	$32

ACCOLADE

BALANCE OF THE PLANET
by Chris Crawford

From the author of Balance of Power comes a game of ecological strategy. EZ to play. Intellectually challenging

Balance of The Planet
List $49.95

SDA Discount Price $32

DATA EAST	
ABC Monday Nite Football	$32
Batman	$25
North & South	$25
Robocop	$25
Super Hang-On	$25
DAVIDSON	
Algeblaster Plus	$32
Math Blaster Plus	$29
Reading & Me	$24
Word Attack Plus	$29
ELECTRONIC ARTS	
Abrams Battle Tank	$16
Bard's Tale 2	$16
Bruce Lee Lives	$25
Budokan Martial Arts	$32
Cartooners	$32
Chessmaster 2100	$32
Cribbage/Gin King	$25
C. Yeagers AFT 2.0	$16
Deluxe Paint 2 Enhanced	$89
Earl Weaver Baseball	$26
Empire	$32
F/16 Combat Pilot	$32
Ferrari Formula One	$26
Fools Errand	$32
Gold of Americas	$26

GAMETEK	
Double Dare	$9.88
Hollywood Squares	$9.88
Jeopardy 25th Anniv.	$9.88
Super Password	$9.88
Wheel of Fortune Gold	$9.88
HI-TECH	
Looney Tunes Print Kit	$9.88
Muppet Adventure	$9.88
Muppet Print Kit	$9.88
Remote Control	$8.88
Ses. St. First Writer	$9.88
Ses. St. Print Kit	$9.88
Swim Wear Calendar	$6.88
Win, Lose or Draw 2	$8.88
Win, Lose or Draw Dlx.	$16
INFOCOM	
Battletech	$32
Circuits Edge	$32
Hitchhikers Guide	$14
Journey	$32
King Arthur	$25
Leather Goddesses	$14
Mines of Titan	$29
Shogun	$39
Zork Zero	$39

CREATIVE LABS, INC.

SOUND BLASTER
CREATIVE LABS, INC.

Blast away the Sound Barrier on your PC! Turn your favorite games into a stereo experience. AdLib compt.

Sound Blaster
List $239.95 **SDA Price $179**

Optional Midi Adapter
List $79.95 **SDA Price $65**

Harpoon	$39
Hunt For Red Oct.	$32
Indianapolis 500	$32
Indy Jones: Crusade Action Game	$26
Indy Jones: Crusade Graphic Adventure	$32
Keef the Thief	$26
Lakers vs. Celtics	$32
LHX Attack Chopper	$39
Loom	$39
Low Blow	$26
Madden Football	$32
Maniac Mansion (Hi-Res)	$29
Might & Magic 1 or 2	$32 Ea.
Pipe Dream	$26
Populous	$32
Sentinel Worlds	$16
688 Attack Sub	$32
Ski or Die	$26
Star Fleet 2	$39
Starflight 1	$16
Starflight 2	$32
Their Finest Hour	$39
Trivial Pursuit	$26
Zac McKracken	$29
EPYX - *ON SALE*	
Axe of Rage	$22.22
Purple Saturn Day	$13.13
Revenge of Defender	$15.15
Snow Strike	$15.15
GAMESTAR	
Face Off Hockey	$29
Take Down Wrestling	$23

INTRACORP	
Cardinal of Kremlin	Call
LEARNING COMPANY	
Childs Write & Publish	$44
Reader Rabbit	$32
Think Quick	$32
Writer Rabbit	$32
Super Solvers Midnight Rescue	$32
Super Solvers Outnumbered	$32
LEISURE/VIRGIN	
Clue Master Detectives	$25
Double Dragon 2	$25
Monopoly	$25
N.Y. Warriors	Call
Risk	$25
Scrabble	$25
MELBOURNE HOUSE	
G. Norman Shark Attack	$25
Hershiser Strike Zone	$25
Magic Johnson B-Ball	$25
War in Middle Earth	$32
World Trophy Soccer	$25
MICROPOSE/MEDALIST	
Airborne Ranger	$25
F-15 Strike Eagle 2	$35
F-19 Stealth Fighter	$44
Gunship	$35
Megatraveller 1	Call
Mi Tank Platoon	$44
Pirates	$29
Railroad Tycoon	Call
Red Storm Rising	$35
Sword of the Samurai	$35

CALL or WRITE for OUR FREE

SPRING 1990 IBM CATALOG

- **Current Complete Software Listings**
- **Closeout Specials**
- **Future Release Info**
- **Hint Books & Accessories Listings**

MINDSCAPE	
After Burner	$25
Balance of Power 1990	$32
Fiendish Freddy's Bigtop	$29
Gauntlet 2	$25
Harley Davidson	$25
Int'l Team Sports	$23
Out Run	$25
Shinobi	$23
Space Harrier	$25
Star Trek 5 Final Frontier	$35
ORIGIN	
Knights of Legend	$32
Omega	$32
Quest For Clues Book 2	$19
Space Rogue	$32
Tangled Tales	$19
Times of Lore	$25
Ultima 4 or 5	$39 Ea.
Ultima 6	$44
Ultima Trilogy	$39
Windwalker	$25
POLARWARE	
All Dogs go to Heaven	$25
Dragon's Lair	$44
Tracon (w/Sound)	$29
SHARE DATA	
All New Family Feud	$8.88
Concentration 1 or 2	$9.88
Nightmare on Elm St.	$23
SIERRA	
Black Cauldron	$25
Code Name: Iceman	$39
Colonels Bequest	$39
Conquests of Camelot	$39
Hero's Quest	$39
Hoyle's Book of Games	$23
King's Quest 1, 2 or 3	$32 Ea.
King's Quest 4	$39
Leisure Suit Larry	$25
Leisure Suit Larry 2 or 3	$39.
Manhunter S.F. or N.Y.	$32 Ea.
Mother Goose	$19
Police Quest 2	$39
Smart Money	$49
Sorcerian	$39
Space Quest 1 or 2	$32 Ea.
Space Quest 3	$39
SIMON & SHUSTER	
S. Trek: Next Generation	$32
SIR TECH	
Heart of Maelstrom	$32
Return of Werdna	$39
Wizardry Trilogy	$32
SOFTBYTE	
Lotto Program 2	$25
SPECTRUM HOLOBYTE	
Falcon	$32
Solitaire Royale	$23
Tank	$39

Tetris	$23
Vette	$32
Welltris	$19
SPOTLIGHT	
Darkside	$25
Deathbringer	$25
Speedball	$25
SSI	
Champions of Krynn	$32
Curse of Azure Bonds	$32
Dragon's of Flame	$26
Heroes of the Lance	$26
Hillsfar	$32
Pool of Radiance	$32
Red Lightning	$39
Second Front	$39
Sword of Aragon	$26
Waterloo	$39
SUBLOGIC	
Hawaii Scenery	$19
UFO	$32
TAITO	
Arkanoid	$9.88
Arkanoid 2: Revenge	$23
Bubble Bobble	$23
Operation Wolf	$23
Qix	$23
Rambo 3	$23
Rastan	$23
Renegade	$9.88
Sky Shark	$9.88
ULTRA	
Teen Mutant Ninja Turtle	$25
ACCESSORIES	
Analog + Joystick	$25
Disk Case 5¼ or 3½	$6.88 Ea.
Drive Clnr. 5¼ or 3½	$4.88 Ea.
500XJ Joystick	$25
Sony 3½ DSDD	$13 Bx.
Sony 5¼ DSDD	$6.99 Bx.
Sony 3½ DSHD	$24 Bx.
Sony 3½ DS Color	$13.50 Bx.

BUSINESS SOFTWARE

SOFTWARE PUBLISHING	
PFS: 1st choice 3.0	$115
PFS: 1st Publisher 2.1	$85
Professional File 2.0	$207
Professional Write 2.1	$149
MISC. APPLICATIONS	
B.W. One Person Office	$44
Dac Easy Accounting 4.0	$99
Dac Easy Payroll 4.0	$65
My Advanced Mail List	$32
My Checkbook	$16
Superbase 2 w/Windows	$173
Quicken 3.0	$39
Timeworks Publish It!	$129
Timeworks Word Writer	$32
Tobias: Mgt.-Money	$139
Wealth Builder	$159

Speedy Delivery
Deep Discounts
Astronomical Selections
If you can't find what you're looking for in our ad, call us.

Ask your Salesperson what's on sale this month!

USA/CANADA orders
1-800-225-7638
PA Orders 1-800-223-7784
Customer Service (412) 361-5291
Fax Order Line (412) 361-4545

- Free shipping on orders over $100 in continental USA.
- No surcharge for VISA/MasterCard.
- Your card is not charged until we ship.
- School purchase orders accepted.

Software Discounters Of America

Send check or money orders to:
P.O. Box 111327 - Dept. CP
Blawnox, PA 15238

VISA MasterCard

Order Line Hours: Mon.-Thurs. 9:00 AM-9:00 PM, Fri. 9:00 AM-7:00 PM, Sat. 10:00 AM-4:00 PM Eastern Time

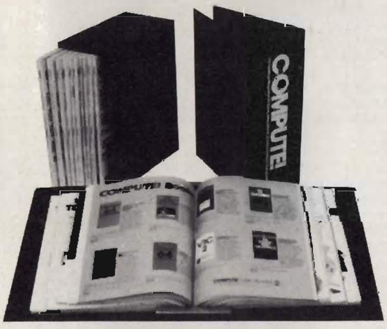
*Please Read The Following Ordering Terms & Conditions Carefully Before Placing Your Order. Orders with cashiers check or money order shipped immediately on in-stock items! Personal & Company checks, allow 3 weeks clearance. No C.O.D.'s! Shipping: Continental U.S.A.-Orders under $100 add $3: free shipping on orders over $100. AK, HI, FPO, APO-Shipping is $5 on all orders. Canada & Puerto Rico-shipping is $7.50 on all orders. Sorry, no other international orders accepted! PA residents add 6% sales tax on the total amount ofd order including shipping charges. CUSTOMER SERVICE HOURS: Mon.-Fri. 9 AM-5:30 PM Eastern Time. REASONS FOR CALLING CUSTOMER SERVICE—412-361-5291 (1) Status of order or back order (2) if any merchandise purchased within 60 days from SD of A is defective, please call for a return authorization number. We will not process a return without a return auth. #! Defective merchandise will be replaced with the same merchandise only. Other returns subject to a 20% restocking charge! After 60 days from your purchase date, please refer to the warranty included with the product purchased & return directly to the manufacturer. Customer service will not accept collect calls or calls on SD of A's. 800# order lines! Prices & availability are subject to change! New titles are arriving daily! Please call for more information.

MODEM OWNERS You can order on-line from our IBM shop via the CompuServe, GEnie and Q-Link electronic malls.

Circle Reader Service Number 188

Save Your Copies of COMPUTE!

Protect your back issues of *COMPUTE!* in durable binders or library cases. Each binder or case is custom-made in flag-blue binding with embossed white lettering. Each holds a year of *COMPUTE!*. Order several and keep your issues of *COMPUTE!* neatly organized for quick reference. (These binders make great gifts, too!)



Binders	**Cases:**
$9.95 each;	$7.95 each;
3 for $27.95;	3 for $21.95;
6 for $52.95	6 for $39.95

(Add $1 per case/binder for postage & handling. Please add $2.50 per unit for orders outside the U.S.)

Send in your prepaid order with the attached coupon

CALL TOLL FREE 7 days, 24 hours
1-800-972-5858

Mail to: Jesse Jones Industries
Dept. COTE
499 East Erie Ave.
Philadelphia, PA 19134

Please send me ________ COMPUTE! ☐ cases ☐ binders.
Enclosed is my check or money order for $ ________. (U.S. funds only.)
Name ________
Address ________
City ________
State ________ Zip ________

Satisfaction guaranteed or money refunded. No P.O. Box Numbers. Please allow 4–6 weeks for delivery.

COMPUTE! Publications Back Issues/ Disk Orders

Individual back copies of *magazines* and *disks* are available by mail only while quantities last.

Please clip or photocopy, and mail completed coupon and check to:

COMPUTE! Publications
Single-Copy Sales
P.O. Box 5188
Greensboro, NC 27403

Name: ________
Street: ________
City: ________
State: ________ Zip: ________
Type of computer: ________

Quantity	Issue (Month/Year)	Magazine or Disk Name	Price*

SUBTOTAL: ________
Sales Tax:† ________
Shipping: ________
TOTAL: ________

- * Back issues of *COMPUTE!*, and *COMPUTE!'s Gazette* are $6.00 each. No issues dated prior to January, 1986, are available. In addition, the following issues are **NOT** available: ***COMPUTE!:*** 12/89; ***Gazette:*** 1/86, 3/86, 4/86.
- * Single disks for *COMPUTE!'s Gazette* are $15.00. Disk/magazine combinations are $16.00 NOTE: No disks dated prior to June 1986 are available. The May 1986 and October, 1987 *Gazette* disks are no longer available.
- * Back issues of *COMPUTE!'s PC Magazine* are $16.00 each. This publication is available only as a magazine/disk combination. Our back issue inventory consists mainly of magazines with 5.25-inch disks, but we will attempt to supply 3.5-inch disks if requested. The following issues are **NOT** available: ***PC Magazine:*** 9/87, 11/87, 1/88, 3/88, 9/88, 11/88, 1/89.
- * Back issues of *COMPUTE!'s Amiga Resouce* magazine are available beginning with Spring, 1989 for $6.00 each. Back issues of *COMPUTE'S Amiga Resource Disk* are available beginning with Summer, 1989 for $10.00 each. Disk/magazine combinations are $12.00. The following issues are **NOT** available: ***Amiga Resource Magazine:*** Summer 1989.

Shipping and handling included for U.S. and Canadian residents. Others add $2.00 for surface mail, $5.00 for air mail.

Payment must be in U.S. dollars by check drawn on U.S. bank. MasterCard or Visa credit cards accepted on orders of more than $20.00. Please include card number, expiration date, and daytime phone number with charge orders.

† North Carolina, New York, and Pennsylvania residents must add appropriate sales tax.

297

Advertisers Index

Reader Service Number/Advertiser		Page
193	Access Software Incorporated	IBC
161	Accolade	29
162	Accolade	63
190	Ad Lib	IFC
	Brøderbund	7
108	Brown-Wagh Publishing	47
114	Computer Direct, Inc.	106–107
126	The Computer Insurance Agency, Inc.	108
150	COVOX, Inc.	13
122	DCS Industries	103
	Damark International, Inc.	17
113	Data East	23
104	Data East	71
117	Delphi/General Videotex Corp.	45
107	Direct Link Software	105
110	Electronic Zoo	5
118	Family Jewels	48
134	Fas-Track Computer Products	15
185	Fremont	96
131	Gold Hill	109
	Good Software Corp.	1
136	International Software Library	108
	Intuit	21
112	jwh: SoftWare	108
103	Lucasfilm Games	33
179	Lyco Computer	114–115
198	MIBRO Company	110
111	MicroLeague Sports Association	65
166	Milliken Publishing Co.	79
	Montgomery Grant	97
	NRI Schools	9
125	Northern Star Software	108
115	Origin	31
157	Parsons Technology	57
157	Parsons Technology	77
116	Prof. Jones Inc.	13
167	Ramco Computer Supplies	89
189	Reasonable Solutions	99
127	Rilco Systems	108
145	SIERRA	BC
188	Software Discounters of America	111
159	Software Excitement!	113
142	The Software Labs	117
	Strategic Simulations, Inc.	73
105	Virgin Mastertronic	69

Classified Ads	104
COMPUTE! Books	100, 108
COMPUTE! Caps	97
COMPUTE! Publications Back Issues	112
COMPUTE! Reader Research Panel	102
COMPUTE!'s SharePak	37

Norfolk, Connecticut 06058; (203) 542-5553. The program sells for $49.95.

— Gregg Keizer

AMIGA

If you've wanted to try your hand at light desktop publishing but have been disappointed with the output of low-end publishing programs, wait no longer. Gold Disk has released *PageSetter II,* a $129 desktop publishing program that lets you create professional-quality output on dot-matrix or low-end laser printers.

PageSetter II supports the same Compugraphic outline fonts included with *Professional Page,* a $395 program. These typefaces can be enlarged or reduced to any point size and look as good as PostScript fonts when printed on an ink-jet or HP-compatible laser printer. They look darn good on dot-matrix printers, too, much smoother than the Amiga's standard bitmapped fonts.

This program actually has more in common with *Professional Page* than it has with the original *PageSetter,* which was limited to using blocky bitmapped fonts. Its user interface is almost identical to the one used in *Professional Page.* Like its big brother, this program lets you import structured art in *Professional Draw* Clip format, IFF pictures, and text in *Scribble!, TextCraft, Transcript, WordPerfect,* and ASCII formats. It also has structured drawing tools, although it lacks *Professional Page*'s bezier curve tool.

About the only features missing from *PageSetter II* are text kerning and tracking, color, and, most notably, PostScript printer support. It does add a few unique features, such as pattern-filled fonts. And, unlike SoftLogik's *PageStream, PageSetter II* lets you mix Amiga bitmapped fonts with the outline fonts. If your layout projects are usually limited to flyers, invitations, and the local user group newsletter, this program has all you need.

For more information, contact Gold Disk, P.O. Box 789, Streetsville, Mississauga, Ontario, Canada L5M 2C2; (416) 828-0913.

New Depths

Electronic Arts' *688 Attack Sub* ($49.95), originally released for IBM PCs and compatibles, is now out in an Amiga version. This excellent submarine warfare simulation takes full advantage of the Amiga's capabilities, with full 32-color graphics and digitized sounds.

There are ten different missions ranging from a peacetime training exercise to a World War III nuclear first-strike scenario. You can command the American 688-class *Los Angeles* or a Soviet Alfa-class attack sub.

In modern submarine combat, you rarely get up to periscope depth, depending instead on sophisticated electronic sonar and imaging systems. With seven different control stations to keep track of, you'll find your work cut out for you. The artificial intelligence in this game is excellent; enemy sub and destroyer captains are extremely cunning. Some scenarios are slow, hunt-and-track exercises where stealth is your best weapon, while others are full-blown torpedo fests.

You can install *688 Attack Sub* on your hard drive; it has no disk-based copy protection. Not only that, but you can even multitask while playing the game! I've spent more than a few evenings chasing Alfas in the Baltic Sea while downloading software from People/Link on another screen. You do have to look up a word in the manual when you first start the game, but the code-word scheme is easy to figure out, unlike the confusing scheme EA used in *F-16 Combat Pilot.* Hopefully, future EA releases will follow *688*'s lead.

If you're ready to plunge to new depths with *688 Attack Sub,* contact Electronic Arts, 1820 Gateway Drive, San Mateo, California 94404; (415) 571-7171.

Trip Mapping

If I'm driving farther than the corner grocery store, I like to have a map handy. I always

GET ON THE FAS-TRACK!

Call us for your FREE 1990 Buyers' Guide—
128 pages of software,
hardware and accessories.
DISCOUNTS UP TO 45% EVERYDAY!

Productivity Software

Better Working eight-in-one **$38.95**

PFS: First Choice	$99.95
Microsoft Works 2.0	$104.95
Quicken	$37.95

Desktop Publishing & Graphics

Publish It! **$114.95**

Publish It! Lite **$35.95**

The New Print Shop	$37.95
Banner Mania	$23.95
Childrens' Writing and Pub Center	$42.95
PC Paintbrush IV	$60.95

Mars-128 400 DPI Hand Scanner

New 5 inch, 400 DPI Hand Scanner! Includes Halo DTP Software. **$179.95**

Kraft Systems

KCIII **$19.95**

Serial Mouse **$43.95**

Thunderstick **$28.95**

Cardinal Internal Modems

Two models: 1200B or 2400B. Includes software.

M1250 **$49.95**

MB2450 **$82.95**

Ad Lib Inc.

Ad Lib Music Card	$124.95
Ad Lib PCMS	$154.95

Utility Software

Copy II PC	$24.95
PC Tools Deluxe	$76.95
Norton Utilities Advanced	$88.95
SpinnRite 2.0	$65.95
Fast Back Plus	$107.95

Entertainment

A10 Tank Killer	$30.95
Arkanoid II: Revenge of DOH	$22.95
Battle of Britain: Their finest hour	$38.95
Battle Chess	$30.95
Blue Angels	$30.95
David Wolf Secret Agent	$30.95
F-19 Stealth Fighter	$33.95
Harpoon	$38.95
Heroes Quest	$36.95
Hunt for Red October	$31.95
Kings Quest 1, 2, 3, or 4	ea $32.95
Leisure Suit Larry III	$36.95
Loom	$38.95
Mean Streets	$36.95
M1 Tank Platoon	$44.95
Operation Wolf	$22.95
Populous	$31.95
Qix	$22.95
Scrabble	$25.95
Sim City	$32.95
Star Flight II	$31.95
Tetris	$22.95
Test Drive II	$27.95
Trivial Pursuit	$25.95
Welltris	$18.95

Education

Where In Time is Carmen Sandiego **$29.95**

Where in the World is C. Sandiego	$29.95
Where in the USA is C. Sandiego	$29.95
Where in Europe is C. Sandiego	$29.95
Interactive Learning SAT or ACT	$30.95
The Playroom	$26.95
Math Blaster or Word Attack Plus	$30.95
PC Globe or PC USA	$42.95
Super Solvers Midnight Rescue	$30.95
Think Quick	$33.95
Oregon Trail	$26.95
Math Rabbit or Reader Rabbit	ea $26.95

FAS-TRACK
COMPUTER PRODUCTS
7030C Huntley Road • Columbus, Ohio • 43229

ALWAYS CALL TOLL-FREE **1-800-272-1600**
1-614-847-4050 (Central Ohio)

VISA MasterCard

Circle Reader Service Number 134

U.S., F.P.O., and A.P.O., add 3% (minimum $4.00) for each shipment. No C.O.D. In Ohio, add 5.75% Sales Tax. MasterCard, VISA, and American Express—No extra charge. We accept purchase orders from schools. Prices subject to change without notice.

FROM HOME TO SCHOOL AND BACK AGAIN, FAS-TRACK DELIVERS!

plan out an exact route and try to figure out how long it's going to take me to reach my destination. But even with a calculator, a road atlas, and my (lack of) math skills, it usually takes me half an hour to figure out that Livermore, California, is 2250 miles by road from Hattiesburg, Mississippi.

Enter *Trip*, from Sky Shepard Software. This road-map-on-a-disk lists over 2400 places and 7400 sections of roads connecting them. Want to drive from Madison, Ohio, to Apple Valley, Minnesota? Just type the names of the cities and *Trip* will plot out the shortest route on a graphic U.S. highway map. You can also print a step-by-step itinerary that includes distances between major cities on your route, compass headings, and estimated travel time.

Trip is great for playing what-if games when planning a vacation. If you're going to visit Grandma and Grandpa in Cape Coral, Florida, how far out of the way is it to stop and visit Aunt Marg in Winter Haven? *Trip* will tell you in an instant.

Trip is also available with a handy road atlas, since it's hard to use an Amiga in your car. If you've got a laptop PC, though, there's an MS-DOS version, too. *Trip* is available for $59.95 without the atlas or $69.95 with it, and it's from Sky Shepard Software, P.O. Box 49, St. Mary's, Iowa 50241; (800) 397-0924.

Memory Mapping

Learning to program the Amiga isn't easy. While the operating system has hundreds of built-in routines to make it easier to create powerful programs, the problem in the past has been to figure out which of those routines you need to use. Not only is the sheer number of routines overwhelming, but there's been no single reference volume that listed all of the Amiga's data structures and system, library, and device calls. Until now.

COMPUTE! Books recently released *Mapping the Amiga*, by *Amiga Resource*'s own Rhett Anderson and Randy Thompson. This nearly 450-page tome lists all of the Amiga's libraries, structures, and hardware registers in alphabetical order. The syntax of each function is given in C, Modula-2, and assembly language. Whether you're just learning to print *Hello World* using C or you're designing your own assembly language libraries, you'll find this book an invaluable reference.

Mapping the Amiga is available for $22.95 plus $2.00 shipping and handling from COMPUTE!'s Bookshelf, P.O. Box 5188, Greensboro, North Carolina 27403.

— Denny Atkin

MAC

What do you do when your hard drive is full? The best solution is to buy another hard drive. Because the Mac uses an SCSI interface, you're able to daisychain as many as seven hard drives to your Mac. Unfortunately, the best solution is also the most expensive and not a real option for many of us.

The second-best solution is to free up extra space on the drive you already have. First, you should remove the fonts, desk accessories, applications, and documents you almost never use. Be sure to copy them to floppy disks where you can find them again if you need them. Then use a program like *Stuffit* or *DiskDoubler* to shrink the files you use only occasionally.

If you frequent the online services, you know *Stuffit* as the program that uncompresses the files with names that end in .SIT. *Stuffit*'s companion program, *UnStuffit*, is in the public domain, so anyone can legally unstuff a SIT file. *Stuffit* can also compress the files on your hard drive, and the latest version can compress entire folders (as well as folders within folders) and restore the files and folders to their proper place on your hard drive. It's easy to use and compresses applications by 20–60 percent and text and graphics by 30–90 percent. *Stuffit* 1.5.1 is a $20 shareware program that's available on most BBSs and online services (it's file 11014 in GEnie's Macintosh RoundTable). You can also order it directly from Raymond Lau, 100-04 70 Avenue, Forest Hills, New York 11375-5133.

DiskDoubler is a similar compression program that's much faster than *Stuffit*. Because it doesn't have as many options as *Stuffit*, it's even easier to use. Though Salient claims *DiskDoubler* achieves better compression, I found that the two programs compress files to roughly the same size. *DiskDoubler* is available for $59.95 from Salient, 3101 Avalon Court, Palo Alto, California 94306; (415) 852-9567.

A word of warning about compression programs: Have several copies of the program around in case something goes wrong (this is less of a problem with *Stuffit* because it's on virtually every online service). Also, keep a non-compressed version on floppy disks of everything you compress—just in case.

Joy Ride

You fought your way through rush-hour traffic, struggled to reach home after a tough day at work. What better way to relax than an hour or two with *The Duel: Test Drive II*, where you can drive as fast as you like in cars you could never afford to buy? Just as in real life, you have to dodge other cars; avoid potholes, oil slicks, and loose gravel; and watch out for the police, whose tickets will cost you valuable time.

The game is identical to the PC version, except for the black-and-white graphics (even on a Mac II) and the sampled motor sounds (turn too sharply and you hear the real sound of squealing tires). Go head to head with another car—the package includes a Ferrari F40 and a Porsche 959—or race against the clock and try to top your own best time.

You can use a mouse, the keyboard, or a joystick. Not having a Mac joystick, I tried the keyboard and mouse and found that the mouse works best. If you use a mouse, be sure to use the control panel to set the mouse to the slowest setting; otherwise, you'll find it difficult to keep your car on the road.

With additional packages, you can add cars and scenery. These include *The Supercars* (with five superfast sports cars, mostly European), *The Muscle Cars* (with five souped-up, high-horsepower American cars from the 1960s), *California Challenge* (race from the Oregon border to the Mexican border), and *European Challenge* (take a whirlwind tour of six European countries).

The Duel: Test Drive II is available for $54.95 from Accolade, 550 South Winchester Boulevard, Suite 200, San Jose, California 95128; (408) 985-1700. The car and scenery packages are available for $21.95 each.

Making Adjustments

It's spring-cleaning time at Apple. To boost sagging sales of its Mac SE, Apple has cut prices $300 on the dual-floppy SE; $500 on the 1MB-RAM, 20MB–hard drive SE; and $700 on the 2MB-RAM, 40MB–hard drive SE. Apple made similar price cuts on the Mac SE/30 and LaserWriter IINT and IINTX. Conspicuously absent was the Mac Plus, which carries a retail price of $1,799 but is available through the discount houses for as little as $1,049. According to Storeboard, a Dallas-based research firm, sales for the SE were down 53 percent during the last four months of 1989, while sales for the Plus were down a more moderate 16 percent. However, sales for the Mac II line have continued to increase.

Prices aren't the only things being trimmed at Apple these days. The company eliminated 400 positions in February (about 3 percent of its work force), with most of the cuts coming from the customer-service and channel-development departments. Sources close to Apple say additional cuts are being considered. So far the R & D department has avoided the knife.

While we're on the subject of reductions—how would you like to reduce the time it takes your Mac 512e, Plus, or SE to crunch numbers? Bravo Technologies has developed a remarkable INIT that works like a math coprocessor to speed up calculation-intensive programs, including many drawing, charting, 3-D graphics, spreadsheet, statistics, and CAD/CAM applications. It's called *SPAMM* (System Program for Accelerated Macintosh Mathematics), and it can make math operations roughly 30-percent faster on a Plus and 50-percent faster on an SE. *SPAMM* is available for $79 from Bravo Technologies, P.O. Box 10078, Berkeley, California 94709-0078; (415) 841-8552.

— David English

DAMARK
INTERNATIONAL, INC.

THE *"GREAT DEAL"* CATALOG
1-800-729-9000
ORDER TODAY!

Emerson

286 AT COMPUTER WITH VGA MONITOR AND SOFTWARE

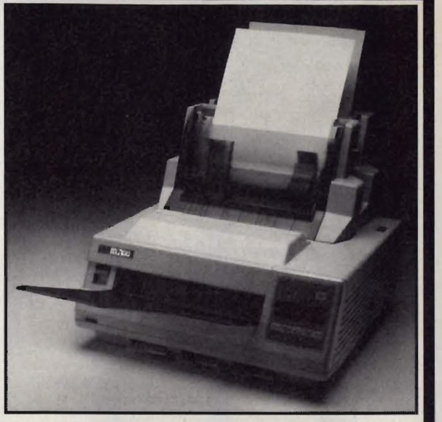
- 100% IBM compatible.
- 80286 microprocessor (operates at 12MHz).
- One 3-1/2" 1.44 MB floppy drive.
- One 5-1/4" 1.22 MB floppy drive.
- 40 MB hard drive (IDE hard disc drive).
- 1 MB RAM on motherboard expandable to 4 MB.
- 14" VGA .41 dot pitch high res. color monitor. 256 colors.
- VGA color card. • AT compatible.
- Four 16-bit expansion slots open. • 2 RS232 serial ports.
- 1 parallel port. • 1 mouse port. • 1 half height drive exposed.
- 1 half height drive cavity enclosed.
- 80287 math co-processor socket.
- 180 watt switchable power supply.
- **One Year Parts Warranty!**
- **120 Day On-Site Servicing Warranty!**
- **Factory New! Factory Perfect!**

Software includes:
- MS-DOS 3.31. • Turbo Pascal 5.0.
- Borland Quattro. • GW BASIC.
- PFS Professional Write.
- Emerson Menu/Turorial Program.
- Check Free.

Mfr. Sugg. Retail:
$3,350.00
DAMARK PRICE:
$1499^{99}
Item No. B-2019-139964
Insured Ship/Hand.: $40.00

FUJITSU

Laser Printer



Print laser-quality letters, reports, pamphlets and catalogs with this speedy, affordable Desktop Fujitsu Laser Printer!

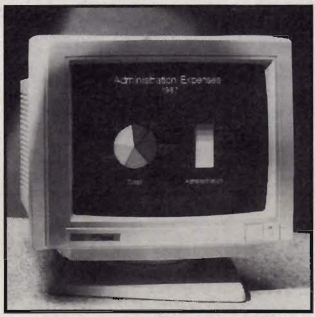
- Personal, compact page-printer, 16 inch footprint.
- Resident emulation: HP Laserjet Plus.
- 640 KB system RAM expandable to 4.6 MB.
- Two top mounted hoppers—change paper without reloading. Max. 150-sheet capacity per hopper and manual insertion slot for envelopes.
- Printing speed: letter 5.3 pages per minute, legal 4.5 ppm.
- Graphics capable. • 30 second warm-up time.
- LED head/electro-photography printing.
- Quiet operation.
- Three IC card slots for additional fonts and emulations—over 100 available.
- Centronics interface. • RS232C interface.
- Clean, easy to replace one-piece process cartridge, Good for 6000 pages.
- Less downtime; increased productivity.
- Three Resident fonts included: Courier 10, Portrait and Landscape.
- 300 x 300 dots per inch resolution.
- Dim.: 6.7" x 16" x 15.7".
- Weight: 41 lbs.
- Model #: RX-7100. • Full Warranty—45 days on sight. 10-1/2 months through an authorized service center.

FACTORY NEW! FACTORY PERFECT!

Mfr. Sugg. Retail:
$2,555.00
DAMARK PRICE:
$899^{99}
Item No. B-2019-131805
Insured Ship/Hand.: $69.00

Leading Technology Inc. PRODUCTS

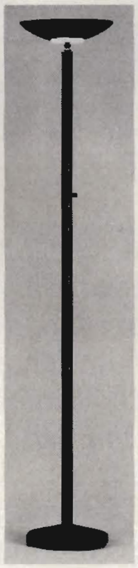
14" VGA MONITOR w/ 16-BIT VGA BOARD



- 14" diagonal non-glare screen.
- 100% IBM compatible.
- Resolution: 800 dot x 600 line.
- 3-way text color: (paper white, amber & green).
- TTL/Analog signal input useable.
- Tilt & swivel stand.
- 2,000 characters (80 x 25 row).
- Also compatible with Mac II, MDA, Hercules, CGA, EGA, PGA, MCGA, VGA, Super VGA.
- Dim.: Approx. 14" x 11.7" x 14".
- Weight: 30 lbs.
- Monitor model #: 1441V.
- **1 Year Warranty!**
- **Factory New & Perfect!**

Level 16™ Color Board :
- 16 bit color board with 256K DRAM. • High resolution for stunning color graphics.
- Resolution: VGA 640x480.
- **One Year Warranty!**

Mfr. Sugg. Retail:
$699.99
DAMARK PRICE:
$399^{99}
Item No. B-2019-136721
Insured Ship/Hand.: $13.00



HALOGEN TORCHIERE FLOOR LAMP

Fill your room with light from this sleek-looking Floor Lamp. It's truly a lamp of the '90s, and its halogen bulb lasts for hours.

- Halogen torchiere floor lamp.
- Shines light upward, yet fills entire room.
- Variable light control switch.
- 500 Watt halogen bulb included.
- Sleek finish. • U.L. approved.
- Glass insert below shade allows light to shine downward also—for a complete lighting effect.
- Height: Approx. 72".
- **One Year Warranty!**
- **Factory New! Factory Perfect!**

Mfr. Sugg. Retail:
$170.00
DAMARK PRICE:
$59^{99}
(Black)Item No. B-2019-127911
(White)Item No. B-2019-130153
(Brass)Item No. B-2019-130161
(Chrome)Item No. B-2019-130179
(Almond)Item No. B-2019-130187
Insured Ship/Hand.: $9.50

Bondwell®

3- BUTTON MOUSE WITH DR. HALO III

- Three control buttons and two sensitivity buttons.
- 200 dpi res.
- Tracking speed: 250mm/s.
- Advance optical-mechanical operation.
- Variable sensitivity.
- Normal, turbo and fine sensitivity modes.
- Silicone-rubber coated tracking ball.
- Sensitivity control allows you to adjust your mouse to suit just about any application.
- Includes connecting adapter.
- Included software: Dr. Halo III and Bondwell Mouse Driver.
- 5 foot cable.
- Model #: B125.
- Dim.: 4.3" x 2.6" x 1.3".
- **Factory New! Factory Perfect!**

Requirements:
- IBM PC, XT, AT, PS 2 or compatible computer.
- 9-pin or 25-pin RS232C serial port.

Mfr. Sugg. Retail:
$79.95
DAMARK PRICE:
$29^{99}
Item No. B-2019-139501
Insured Ship/Hand.: $6.00

FOR FASTEST SERVICE CALL TOLL FREE
1-800-729-9000
CUSTOMER SERVICE: 1-612-566-4940

QTY	DESCRIPTION	ITEM #	S/H/I	PRICE

DELIVERY TO 48 U.S. CONTINENTAL STATES ONLY

VISA MasterCard DISCOVER

SUB TOTAL	
in MN add 6% Sales Tax	
Total S/H/I	
GRAND TOTAL	

NAME ____
ADDRESS ____
CITY ____ ST ____ ZIP ____
PHONE ____

☐ Check/Money Order ☐ VISA SIGNATURE ____
☐ MasterCard ☐ Discover CARD NO. ____ EXP. DATE ____

Send To: DAMARK INTERNATIONAL, INC., 6707 Shingle Creek Parkway, Minneapolis, MN 55430

B-2019

COMPUTE! SPECIAL REPORT:

CD-ROM IN MOTION

THE DISCS ARE SPINNING, BUT WHERE IS THE MOVEMENT HEADED?

KEITH FERRELL

Signs of strain, signs of strength. CD-ROM (Compact Disc–Read Only Memory) is changing from an enthusiasm into an industry and is showing all the effects that such growth brings.

The fifth annual Microsoft CD-ROM Conference, held in San Francisco in early March, carried the theme Ideas in Motion. They certainly were. Not all of the ideas, however, were new, nor were all of them practical or even popular with conference attendees.

The chief idea espoused at the conference was *multimedia,* the mingling of audio, video, and other information formats into a single platform. (Actually, multimedia is less an idea than it is a concept, as in "Multimedia! What a concept!")

As conceived by the leading gurus of CD-ROM, multimedia is close to being a panacea for the current stagnation in both the consumer CD-ROM marketplace and the broader consumer computer marketplace.

State of the Industry

Although it has grown substantially over the past year, the CD-ROM marketplace remains small. According to Infotech, an industry analysis group based in Pittsfield, Vermont, the number of CD-ROM titles increased by more than 100 percent during 1989, as did the number of CD-ROM drives and readers in the global marketplace.

Half a million drives and more than half a billion dollars—but it's hardly a major industry. CD-ROM's greatest penetration still occurs in corporate and financial markets rather than in the general business or consumer arena. And while CD-ROM holds great promise for educational applications, that market has yet to take off.

Nonetheless, Bill Gates, chairman of Washington-based Microsoft, kicked off the conference with an exuberant view of a world in which there's a PC on every desk, in every home, and in every classroom. Those PCs, according to Gates, all have multimedia capabilities.

Back to Basics

In Gates' view, the minimum hardware configuration for multimedia is a 10-MHz, 286-based PC with two megabytes of RAM, VGA graphics, audio capabilities, and a CD-ROM drive. Currently, according to Gates, there are more than 5 million upgradable PCs in the marketplace, with a typical upgrade costing less than $1,000.

That upgrade estimate seems optimistic; CD-ROM drive prices now hover between $600 and $1,100, on the average. In addition, most consumers have yet to equip their PCs with VGA or two megabytes of RAM. For Gates' vision to come true, prices will have to drop dramatically in the next 12 months.

Beyond that base platform, more sophisticated CD-ROM multimedia applications will require more horsepower. At the conference, Gates sketched out some of the improvements and innovations he expects by the mid-1990s.

Realtime audio compression. Audio information devours disk space; a CD can hold less than an hour of digital audio, with little room left over for anything else. Gates anticipates realtime audio compression by 1992–93.

An affordable blitter chip. The blitter functions as a graphics coprocessor, enhancing and improving video manipulation without requiring a major hardware upgrade. Software publishers would need to provide new drivers to take advantage of the blitter.

Digital Video Interactive. Computer users can look forward to interactive video environments that rival full-motion video as seen on television with the advent of DVI technology. It's still a distance off—perhaps 1993—but it's on the horizon.

More, More, More

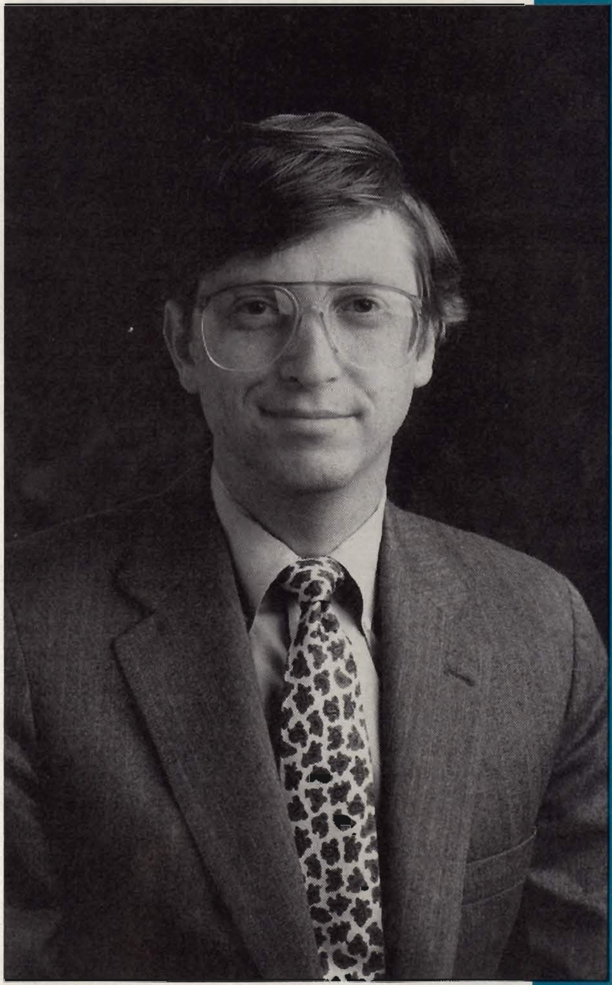
Most of these innovations will outstrip the abilities of that 10-MHz 286 Gates holds up as the base multimedia platform. By 1993, he argues, we'll need four to eight megabytes of RAM, as well as a more powerful processor.

That power will probably serve a magneto-optical device that not only accesses stored data as do current CD-ROM drives, but also writes to the disc. Such a device would consolidate three functions—storage, distribution, and retrieval—in a single unit.

It's likely that these new media will require their own creativity and programming tools. Gates calls for the development of standard graphical environments for consumers, much like what is seen on the Macintosh today or in Microsoft's own *Windows* interface. Tools, techniques, and utilities will also be needed to manage the synchronization of audio, video, and text; to manage animation; to handle photo-quality stills; and to integrate all the different media into individual applications and products.

Despite the challenge Gates has placed before the personal computer industry, he dismisses the need for evangelists. The public, he insists, wants multimedia. People just need to be made aware that they want it.

If that awareness can be increased, Gates says the payoff could start coming as early as this year. ▹



Bill Gates, Microsoft's CEO, predicts that someday every home will have a CD-ROM–based PC.

But What's It Going to Do?

Hardware considerations are only part of the CD-ROM story. For CD-ROM to succeed and live up to its potential requires innovative applications. Gates sees such applications falling into five major areas: productivity, education, information, creativity, and entertainment.

CD-ROM promises to change the way productivity software is designed and distributed. With its vast storage capacity, CD-ROM can hold not only a product's software code, but also its documentation. The documentation and tutorials, in fact, can be made interactive and at least somewhat intelligent. Imagine a word processor that teaches you as you work, making new levels of tools and abilities available as your skills improve.

An important subset of productivity, one that's already generating products and even profits, is training and sales tools. CD-ROM is an ideal medium for software demonstrations, point-of-purchase promotions, and interactive vocational instruction. As the work force requires more and more on-the-job education, CD-ROM training should attract more and more attention and investment.

The huge educational marketplace fuels one of the great hopes of the CD-ROM industry. Already more drives are appearing in schools, and as CD-ROM encyclopedias and educational products become more available and powerful, the number of drives is expected to grow dramatically. Many education analysts and observers feel that multimedia offers the chance to reinvigorate the classroom experience, making educational materials more accessible to a generation of students reared on television, videotape, and motion pictures.

COMPTON'S MULTIMEDIA ENCYCLOPEDIA

The award-winning *Compton's MultiMedia Encyclopedia* includes 10 million words, 15,000 photos, and close to an hour of spoken word and music.

CD-ROM is already well established in the publishing arena. For large financial databases, actuarial tables, and other huge bodies of data, CD-ROM is currently the most effective and economical means of distribution. Consumer-oriented information products will be appearing soon on CD-ROM in greater numbers. The CD-ROM *Guinness Book of World Records* was demonstrated at the conference, as were more specialized electronic books. The Library of Congress is beginning to digitize some of its materials for distribution on CD-ROM. As the time required to master and press CD-ROMs shrinks, the medium becomes more attractive to publishers of time-critical information. It's possible now to move from master to completed disc in a matter of hours.

Other Applications

The unleashing of personal creativity has been one of the promises of the personal computer since its introduction. CD-ROM, Gates hopes, will help further that cause by providing users with tools and tutorials aimed at heightening creative abilities in music, graphics arts, writing, and multimedia itself.

Electronic entertainment played a large part in the personal computer boom of the early 1980s. Although CD-ROM entertainment has yet to take off in this country as it has in Japan, where there are more than 250,000 entertainment-oriented CD-ROM drives in place, Gates continues to endorse entertainment as one of the avenues toward higher CD-ROM presence in homes.

Gates' enthusiasm for multimedia was mirrored in some of the products introduced at the conference. For example, Intel and IBM announced add-on boards that deliver DVI playback and capture capabilities for PCs. The playback board ($1,995) offers realtime compression and decompression of full-motion digital audio and video from prerecorded software, while the capture board ($2,150) lets users show presentations generated on a camcorder. Both boards are part of Intel's Actionmedia 750 line, and both will be available for both the 16-bit AT bus and the 32-bit Micro Channel bus.

Perhaps more intriguing were the products not on display at the conference. IBM's long-anticipated multimedia PC was not introduced. Fujitsu, whose FM-TOWNS 386 machine includes a CD-ROM drive, did not display a version for the U.S. market. Sony, which made headlines at last year's conference with its CD-ROM XA standard, which will enhance, among other things, CD-ROM audio capability, had little news to report.

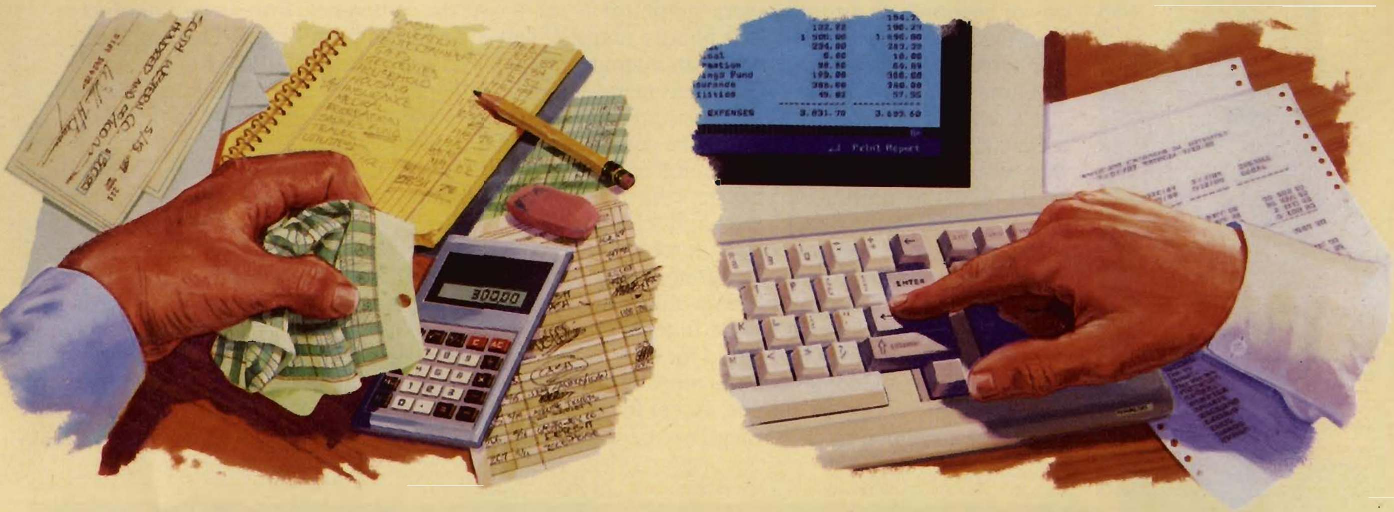
Of the products demonstrated, those that may have the largest impact on the home and educational markets were encyclopedias and games.

Call for Mr. Diderot

CD-ROM's enormous storage capacity makes the medium ideal for encyclopedias. And in San Francisco, the encyclopedia makers were out in force.

Attracting perhaps the most attention was Britannica Software, which unveiled a CD-ROM edition of *Compton's MultiMedia Encyclopedia.* The product includes 10 million words, 15,000 photos, close to an hour of spoken word and music—all of it indexed and linked via a graphical

Say Goodbye to Financial Hassle!



So Long, Tedium

Hello, Quicken!

Why waste time doing your finances by hand? Let Quicken *take care of* everything from bill paying to bookkeeping...reconciliation to reporting. *It finishes in minutes what used to take hours.*

So Easy, You're Up and Running in Minutes

If you know how to use a checkbook, you know how to use Quicken. On the screen you'll see an image of a check that you fill out just like you would a paper check. There's virtually nothing new to learn, so you can get started right away.

Saves Time and Ends Hassles

Quicken does most of your financial work for you. It learns your regular bills so when you need to pay the electric bill, you just confirm the payment amount. Quicken automatically performs 14 bookkeeping steps such as updating your account balance. Then it prints for you checks already addressed for mailing. Or, you can pay your bills with CheckFree,* the electronic payment system.

Quicken saves you even more time preparing for taxes. In seconds you can print itemized lists supporting all of your deductions. Plus, Quicken links directly to top selling tax software like TurboTax.*

Know Where Every Dime Goes

When you pay bills, just tell Quicken which category is involved—utilities, groceries, mortgage, or any other expense. Then, in 3 seconds, you see reports showing all of your income and expenses, budget, net worth, and more. Quicken tells you exactly how much money you have and exactly where it's going.

Powerful Business Features

Over half of Quicken's customers use it for business bookkeeping. They produce Profit and Loss statements, Balance Sheets, and other management reports. Quicken also forecasts cash flow, and tracks A/R, A/P, payroll, jobs, clients, properties, and more.

Try Quicken FREE for 30 Days

Why wait to say goodbye to financial hassle? Order Quicken **today.** If you're not completely satisfied, return it for *a full no-questions-asked refund.*

Critics Applaud Quicken

"If you want to spend as little time as possible each month keeping your checkbook in order, Quicken does it best."

—Bill Howard
Executive Editor,
PC Magazine

Bill Howard, 9-26-89

Best of 1989 AWARD

"Quicken is...so easy to use that you may forget you're working on a computer."

—Richard O. Mann, **PC Today**

SPECIFICATIONS
IBM: All IBM PC, XT, AT, PS/2 and compatibles with 320K RAM and DOS 2.0 or higher. **Mac:** All with 512K RAM. Both versions work with all monitors and printers. Feature sets vary. Balance Sheet report not available for Mac. CheckFree not available for Mac, or outside the U.S. Unlimited FREE technical support. Not copy-protected.

$59⁹⁵

Intuit
Quicken

Send this coupon, or call
1-800-624-8742
U.S. and Canada.

☐ **YES,** I want to say goodbye to financial hassle and try Quicken for $59.95, including free shipping by air. If I'm not completely satisfied, I may return it within 30 days for a full refund. (CA residents, please add sales tax. For coupon orders, allow 10 days for delivery in U.S. and longer in Canada.)

Name____________________

Address____________________

City__________ State______ Zip______

Daytime Phone (____)________________

IBM: ☐ 5¼" disk ☐ 3½" disk OR ☐ **MACINTOSH**

Preferred Payment Method (check one):
☐ Check enclosed
(no purchase orders or C.O.D., please)
☐ VISA ☐ MasterCard ☐ American Express
Card No. Exp. Date

Signature
X____________________

Mail to:
Intuit
66 Willow Place,
Menlo Park, CA 94025

CP06

interface to ease accessibility.

Users navigate through the encyclopedia by way of keywords or through several graphical gateways. Those gateways include photos, maps, help screens, electronic bookmarks, an interactive time line, and a 150,000-word dictionary.

Compton's MultiMedia Encyclopedia received a major endorsement during the conference when Tandy/Radio Shack announced it would place the multimedia encyclopedia in more than 700 Radio Shack stores and sell the product through its education sales force.

At the same time, Britannica announced that the exclusive platform for the stand-alone version of the encyclopedia will be Tandy's 2500 XL personal computer. Configured for CD-ROM, the 2500 XL comes close to meeting Gates' multimedia specifications, except for price: The computer has a 40-megabyte hard disk, a CD-ROM player, VGA, and a mouse and sells for $3,592.90.

At the conference, Britannica's product received an award from Philips/DuPont, recognizing its creative use of CD-ROM.

Other encyclopedia publishers displayed products and debated the nature of the CD-ROM marketplace.

Peter Cook of Grolier Electronic Publishing discussed the translation of *Grolier's Electronic Encyclopedia,* one of the first CD-ROM titles, into a multimedia product. Grolier sees several constraints affecting the development of effective multimedia encyclopedias. First introduced on CD in 1986, *Grolier's Electronic Encyclopedia* has undergone steady evolutionary growth, with the addition of bookmarks, hypertext links, and a Macintosh version. Multimedia aspects are being added to the product, but Cook cautions that

Activision's *the Manhole* was the first CD-ROM entertainment product.

the Manhole
the Manhole
A Fantasy Exploration for Children of All Ages
Cyan
ACTIVISION
For Macintosh
the Manhole
Macintosh SE

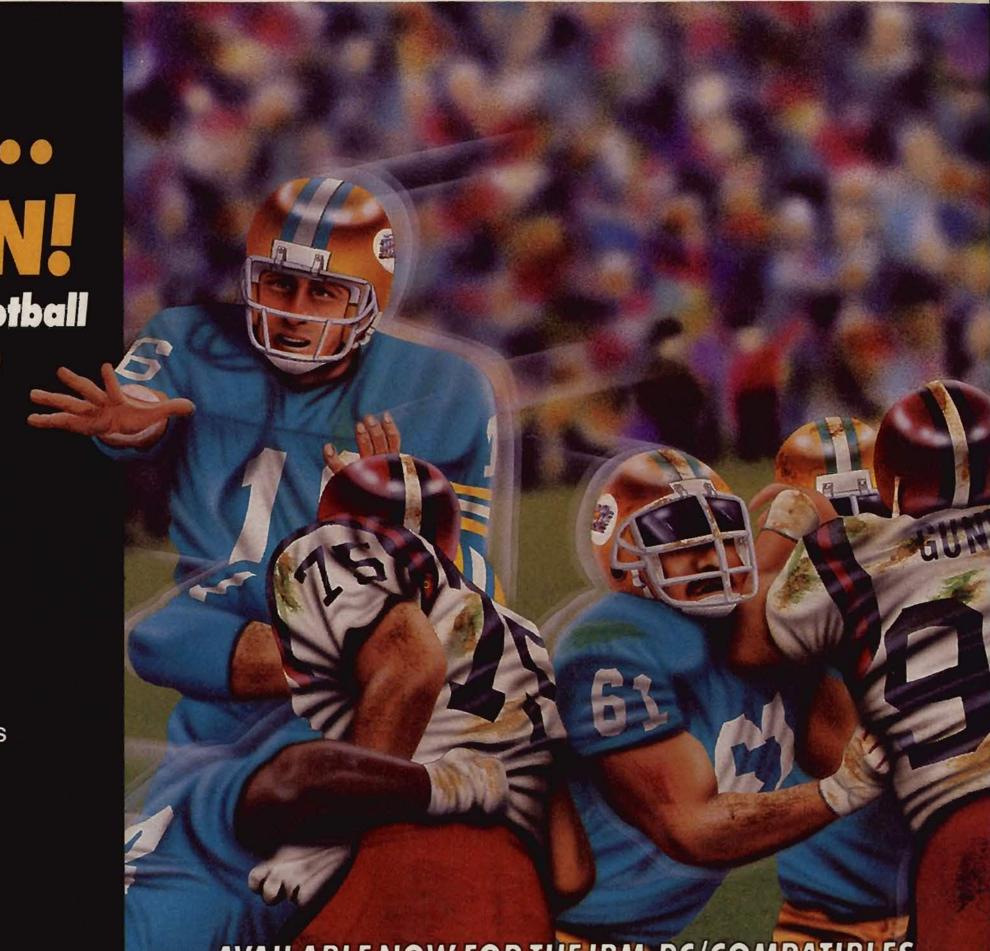
CATCH IT!... IF YOU CAN!

ABC's Monday Night Football Like You've Never Seen Before!

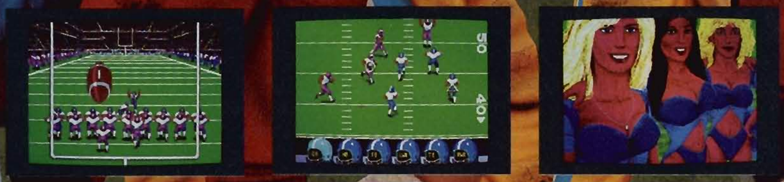
Powerhouse shotguns. Unexpected fumbles, on-side kicks, awesome blitzes and some of the most incredible touchdown runs you'll ever make.

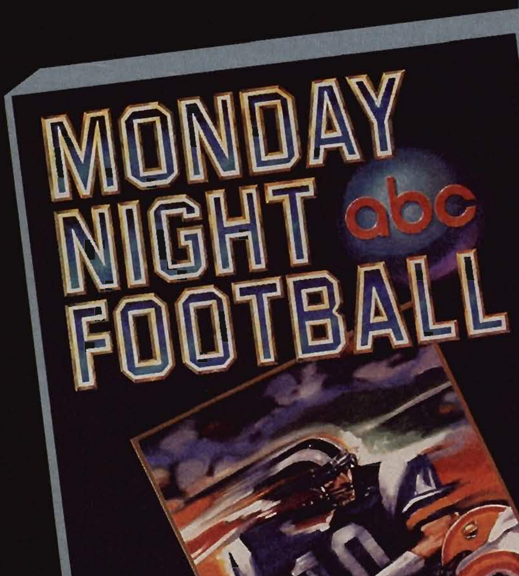
YOU set the formations and **YOU** call the plays. Select from over 40 preset playscreens or, create your own plays. And, the digitized sound technology gives you Frank Gifford's actual voice announcing your most awesome moves.

But, whatever you do – don't be left on the bench when ABC's Monday Night Football kicks off.



AVAILABLE NOW FOR THE IBM-PC/COMPATIBLES AND COMMODORE 64.





DATA EAST MVP SPORTS

SONY Free Interactive Demo

Buy a Sony® ten-pack of 3.5″ floppies and receive a FREE interactive demo of ABC's Monday Night Football software game.

Demo includes a special "SONY SPORTBOOK" which gives you additional plays to use with the complete ABC's Monday Night Football game. Available only through SONY and Data East MVP Sports.

Free USA Today Sportsware

Get a **FREE** bonus worth more than **$50** from USA Today Sports Center. With every purchase of ABC's Monday Night Football game, you'll receive **FREE**:

- USA Today Sports Center membership
- Sportsware – communications software
- Online time to the USA Today sports information network.

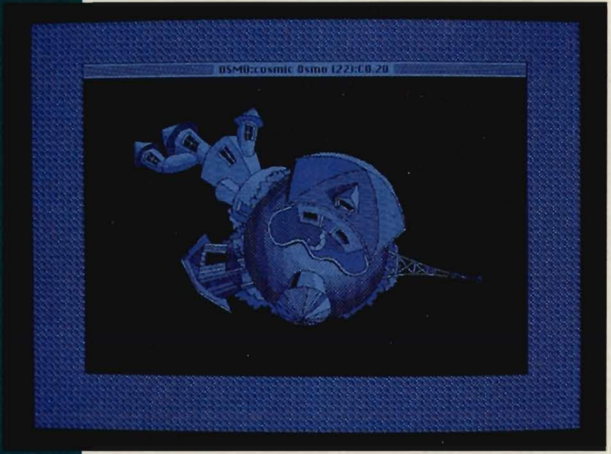
USA TODAY Sports Center

© 1989 Data East USA, Inc. ABC's Monday Night Football is a registered trademark of ABC Sports, Inc. Data East MVP Sports is a trademark of Data East USA, Inc. IBM is a registered trademark of International Business Machines. Commodore 64 is a registered trademark of Commodore Business Machines, Inc. Sony is a registered trademark of Sony Corporation. USA Today Sports Center is a registered trademark of Gannett New Media. Sportsware is a registered trademark of USA Today Sports Center.

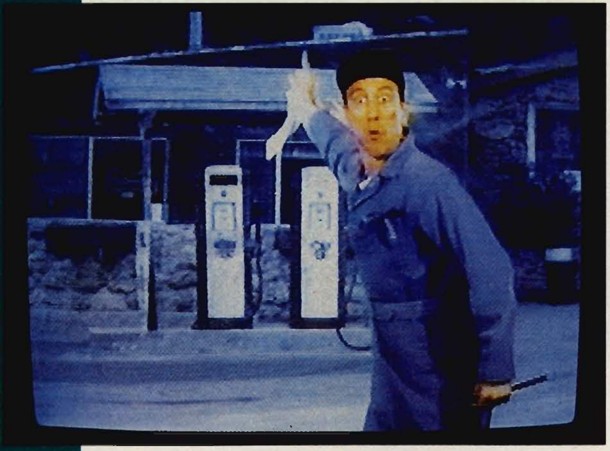
Circle Reader Service Number 113

much work remains before multimedia becomes a truly viable format. Technical constraints standing in the way of the full flowering of multimedia include the slow access speed of most CD-ROM drives as well as display and audio limitations.

Peter Mollman, vice president of World Book, offered conference attendees a counter view of the wonders of multimedia. Feeling that multimedia in itself isn't a guarantee of success, World Book has developed a text-only product called *Information Finder.* Mollman stresses the interactivity of traditional paper information media such as books—or computer magazines, for that matter—especially in terms of visual image resolution. His comments sparked both approving nods and annoyed grimaces.



This is one of the new worlds added to the CD-ROM version of *Cosmic Osmo* from producer Mediagenic.



Cinemaware is developing *It Came from the Desert* for a Japanese CD-ROM–based game system.

Play ROMs

Interactive entertainment seems made for CD-ROM, yet the number of products released or announced in the U.S. remains small.

Bruce Davis, head of Mediagenic, showed off CD-ROM versions of both *the Manhole* and *Cosmic Osmo,* games which take an "exploratorium" approach—whimsically interactive, essentially plotless environments in which virtually every detail can be brought to life at the click of a mouse. The products have sold fewer than 5000 copies, despite being widely respected within the industry. Mediagenic also demonstrated a CD-ROM development language.

Cinemaware showed off early scenes from its CD-ROM version of *It Came from the Desert,* a send-up of the 1950s' giant-bug movies. The game is being developed for NEC's Turbo-Grafx videogame system. In Japan, the Turbo-Grafx's predecessor, PC-Engine, has enjoyed terrific CD-ROM success, with a quarter of a million drives already sold. Since its introduction last year, about 10,000 CD-ROM drives have been sold for Turbo-Grafx in the United States.

Stan Cornyn of Warner New Media made perhaps the most dynamic analysis of the CD-ROM consumer entertainment market. He sees that market as coming to life only when CD-ROM drives can be brought to market for less than $200 retail. Once that happens, he anticipates that the music industry will jump on the CD-ROM bandwagon, releasing discs that combine music with video for a sort of MTV-Interactive approach.

An additional early consumer market will be audio enthusiasts, whom Warner is already targeting with its Audio Notes line. Cornyn demonstrated an interactive CD-ROM that focused on Mozart's *The Magic Flute,* providing audio, text, and visual information related to that work.

The Next Generation

This was the fifth annual Microsoft CD-ROM Conference and Exposition. Five years is quite awhile in the computer industry, yet many conference attendees expressed concern that CD-ROM is still in its infancy, with important questions about its adulthood yet unanswered. Standards remain to be fully resolved, hardware specifications are uncertain, prices are still too high.

Other technologies are emerging that could threaten CD-ROM's potential growth. Laser discs are making a comeback. Magnetic storage is undergoing phenomenal growth in both capacity and capability. Silicon-based products—videogame cartridges, for example—are growing more sophisticated and powerful. A major innovation or marketing push in any one of these could harm CD-ROM's chances for expansion into the broad consumer marketplace.

For all that, the outlook for CD-ROM is good. Whether or not multimedia catches on—or even gets a formal definition—it seems clear that new, colorful, noisy, all-talking, all-singing, all-dancing computer applications are on their way.

And many of them will arrive on the back of shiny CD-ROMs. ◻

Features Editor Keith Ferrell has been known to get lost for hours in his CD-ROM drive.

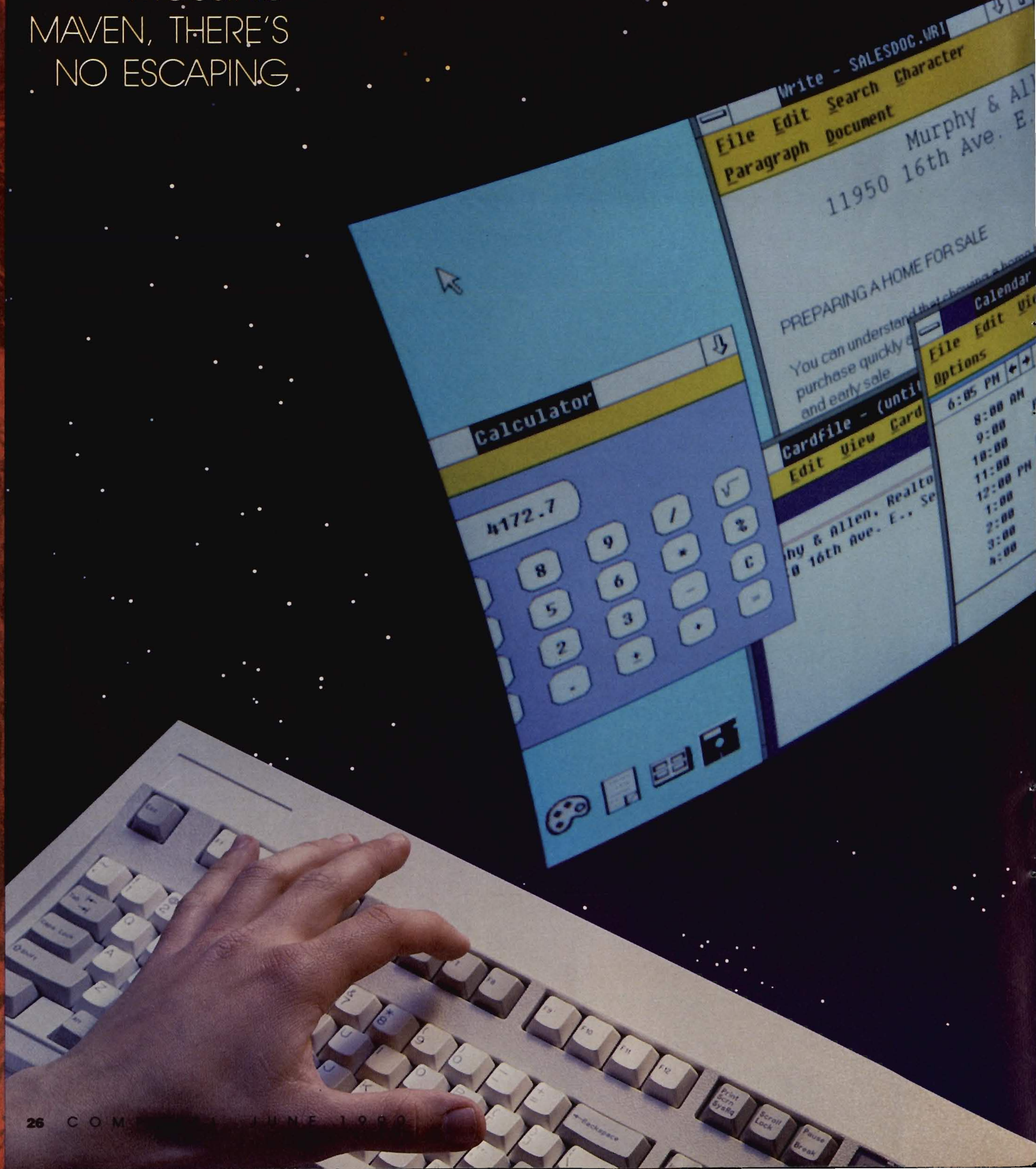
IN FOCUS

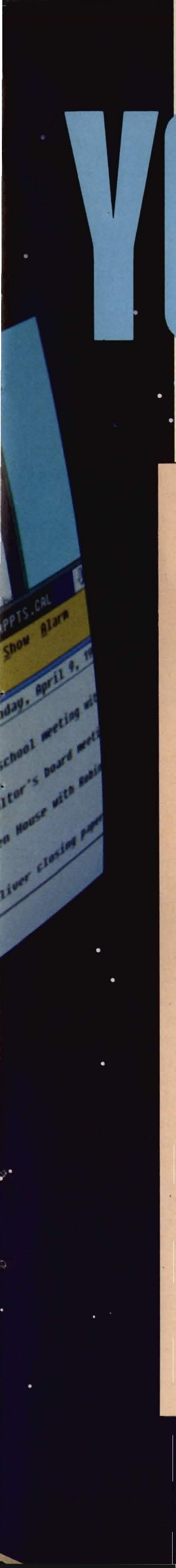
THE GUI AND YOUR HOME PC

DROP DOWN. TEAR OFF. RESIZE. AN AGE OF TRANSITION, AN ERA OF DOS PROMPTS AND MENU BARS. COMMAND LINE COMMANDOS STILL RULE, BUT THERE'S NO ESCAPING THE GUI. CARTOON AS ICON. THE INTUITIVE TOOL. OPEN WINDOWS ONTO THE EVOLVING WORLD OF HOME COMPUTING. IT'S THE NEW WAVE FOR THE NEW GENERATION, A BRIGHT SCREEN GEM, A DESK MATE FOR YOUR TRAVELS INTO THE PC FUTURE. IF YOU WANT TO SEE WHAT'S HAPPENING AT THE TOP, YOU CAN OS/2, TOO. BUT IT'S AT THE OTHER END WHERE THE EXCITEMENT IS—AT HOME WITH 20 MILLION PC AND XT MACHINES, THE MULTITASKING THEY SAID COULD NOT BE DONE, THE ENVIRONMENT THEY SAID COULD NOT BE BUILT. WE'RE HERE TO TELL YOU ABOUT IT, ABOUT ALL OF IT, WHEN WE EXAMINE THE GUI IN YOUR FUTURE ON PAGE 26. BUT WE'RE NOT THE ONLY VOICE. THE GUY WITH HIS EYE ON THE LOW-END GUI TAKES HIS STAND IN "MY VIEW" ON PAGE 35. BUILDING A GOOD GUI IS TOUGH. IT HAS TO BE MORE THAN JUST ANOTHER PRETTY INTERFACE. GETTING THE MOST FROM ONE ISN'T EASY, EITHER. TO HELP, WE'VE COMPILED A BUYER'S GUIDE TO PROGRAMS THAT GET GRAPHICAL. CLICK ON PAGE 38. TAKE A LOOK AT THE PROGRAMS IN THIS MONTH'S *SHAREPAK*, DESIGNED TO EASE YOUR ENTRY INTO THE WORLD OF GRAPHICAL INTERFACES. WE'VE EVEN INCLUDED A COUPLE OF EXTRAS. READ ABOUT THEM ON PAGE 36. ROUNDING OUT OUR FORAY, "RESOURCES," ON PAGE 49, DESCRIBES INFORMATION ALL ABOUT

WHETHER
YOU'RE A
COMMAND LINE
CURMUDGEON
OR A MENU-
MOUSING
MAVEN, THERE'S
NO ESCAPING

THE GUI IN


Write - SALESDOC.WRI
File Edit Search Character
Paragraph Document
Murphy & Al
11950 16th Ave. E.
PREPARING A HOME FOR SALE
Calculator
4172.7
Cardfile - (unti
Edit View Card
Calendar
File Edit
Options
6:05 PM
8:00 AM
9:00
10:00
11:00
12:00 PM
1:00
2:00
3:00
4:00



YOUR FUTURE

HOWARD MILLMAN

The *raison d'être* of every graphical user interface (GUI, pronounced *gooey*) is to standardize the look and feel of software, making computing easier to learn and computers easier to live with. Novices can avoid arcane DOS commands and select operations from helpful drop-down menus. Experienced DOS users, who may suffer at first because they must "unlearn" DOS, gain access to powerful, integrated applications.

The earliest interfaces—simple DOS shells—performed a few disk housekeeping chores and, in some cases, even enhanced CGA displays. GUIs expand the shell's features and functions. They add desktop tools like calendars, to-do lists, and calculators. They also confer greater control over the appearance of the screen and over what information it displays.

But before you migrate to a GUI, inventory your hardware and review your needs. Which interface you adopt depends on your computer's processor, disk drives, and conventional plus expanded memory. Your own preferences—graphics or text, menus or keyboard commands, speed or standardization—also play a large role in moving you toward one GUI instead of another.

With this examination of five leading GUIs, *COMPUTE!* hopes to help make your decision about GUIs an informed one. With our help, you can open a window onto the future of personal computing.

Choice of the 8088 Generation

Tandy's *DeskMate* represents the simplest form of a graphic interface. But it's more than just another pretty face. At $99, *DeskMate* is a bargain—easy to learn and easy to live with.

DeskMate is a hybrid, combining a predominantly character-intensive interface with modest graphic features. The program's target markets—home office, small business, schools, and informal users—gain far more from *DeskMate*'s simplicity than they forgo in performance. For them, *DeskMate,* even though a bantamweight in the GUI ring, weighs in as an ideal choice.

To further its appeal to economy-class computer owners, *DeskMate*'s hardware requirements are the least demanding of any GUI. All you need is a PC with one floppy disk drive and 384K of RAM. This modest configuration provides access to an array of handy applications under its Desktop metaphor.

As veteran keyboarders will discover, however, "there ain't no free lunch." *DeskMate* runs slowly on non-Tandy machines (but faster on Tandy's computers that include *DeskMate* in ROM).

The elementary word processor, Text, comfortably delivers fundamental word processing features like search, cut and paste, and a spelling checker. The superb optional *DeskMate Thesaurus Companion* expands the built-in thesaurus's dictionary to 220,000 words. Text imports graphics from other *DeskMate* applications, including the program's integrated Draw program.

Draw, as the name promises, lets you create and print illustrations. A respectable assortment of tools, type styles, and features (like Zoom) assists in creating surprisingly sophisticated graphics. Unfortunately, Draw is limited by a nonstandard file format that excludes importing industry-standard clip art. And although a mouse is optional in every other *DeskMate* application, in Draw it's practically a necessity.

DeskMate's other applications include Worksheet, a simple spreadsheet well suited for lightweight number-crunching but employing nonstandard terminology (Tandy offers *Lotus Spreadsheet for DeskMate,* which adheres to the *1-2-3* terminology); Filer, a simple forms-generator and flat-file database; Telecomm, an elementary telephone dialer that allows you to construct simple scripts and supports baud rates from 300 to 9600 bits per second. You also get Calendar, a monthly calendar with an electronic tickler file, alarm, and 19-calendar capacity.

Supplementing these main *DeskMate* applications are ten accessories, including a calculator, notepad, and to-do list. Accessories appear as overlays on the active screen. *DeskMate* devotees can also run standard DOS programs from the Desktop and further their *DeskMate* library with titles offered by third-party publishers.

DeskMate delivers an unexpected bonus in its task-switching function, which lets you swap out one active program and operate another without going through a lengthy save-and-retrieve process. Upon returning to the first program, you'll find yourself where you were when you first switched out. To enhance this feature, Tandy should incorporate the ability to swap out to expanded or extended memory. The company should also provide easier access to DOS.

That said, Tandy deserves credit for pursuing, and achieving, an elusive goal: a GUI that's simple, helpful, and affordable.

Graphics Gateway Jewel

The *GEM* interface lays claim to a large base of applications and compatible peripherals. Some 500 applications employ Digital Research's (DR's) vintage interface, including a comprehensive collection of powerful desktop publishing, paint, graphing, sign-making, and word processing applications. But DR's acquisition of new applications has slowed dramatically. Once the premier DOS graphic interface, *GEM* now seems resigned to second place, beneath *Windows'* perceived supremacy.

> Apple introduced its standards-setting graphics interface in 1984. Since then, Macintosh users either have used Finder or nothing at all. MS-DOS users have a choice: to endure the surly yet swift DOS command line or switch to a GUI.

Comparing *GEM* to *Windows* is impractical, perhaps even unfair. *Windows,* despite its present shortcomings, offers far more features, promises more growth, and supports a wider range of best-selling applications. Conversely, it's more expensive and harder to use than *GEM.*

But while *GEM* comes up short when set against *Windows,* Presentation Manager, and *NewWave,* it can't be easily dismissed. For a select group of users (those wanting to step up in features and sophistication from *DeskMate,* for example), *GEM* performs well. Of the five GUIs reviewed in this article, *GEM's* Desktop deserves top honors for its unparalleled simplicity and intuitive design. You need no more than a few minutes thumbing through the instruction manuals before you're up and running.

At $49.95, *GEM's* price compares favorably with *DeskMate's.* That price includes the requisite desktop utilities (calculator, print spooler, clock) but doesn't cover major applications like word processing, drawing, or number-crunching.

If you configure *GEM's* desktop display to occupy the maximum number of windows (two), the lower half of the otherwise unadorned opening screen graphically depicts your system's floppy and hard drives. The upper half displays labeled folders and applications. You can expand either window to full-screen size.

GEM designates directories or subdirectories as folders. Folders contain files; files consist of executable applications (filenames which end in EXE or COM) and their documents. That's the extent of *GEM's* jargon.

Heading up the Nice Touch department is *GEM's* array of 16 icons that you can use to depict folders. (Sorry, but you can't modify the icons or design your own.) *GEM* will copy, move, or delete a folder and its associated subdirectories (including all their files) in one operation.

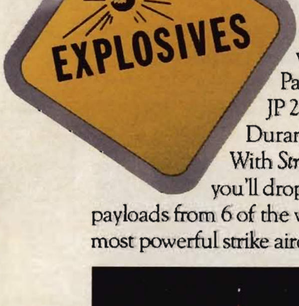
You manage your files by either of two methods. With keyboard commands, you open folders, then load the appropriate application. With the mouse, you drag individual files or folders across the desktop for merging, deleting, and copying. You can highlight multiple folders or files by creating an encompassing rectangle (simply hold down the button as you drag the mouse). These techniques typify the ease of using the *GEM* interface.

Running DOS applications within *GEM* requires your stepping through a configuration routine. This entails responding to a few questions that are displayed in a dialog box and then assigning an icon to the application. Once you've completed this process, DOS applications run reliably.

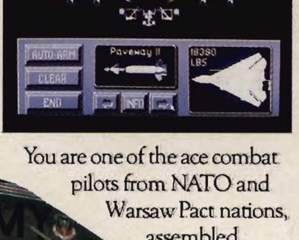
With its lucid, well-illustrated manuals, ease of installation, unpretentious interface, and Spartan drop-down menus, *GEM* works hard at being intuitive. The fact that *GEM* contains no online help—and doesn't need it—indicates how well it succeeds.

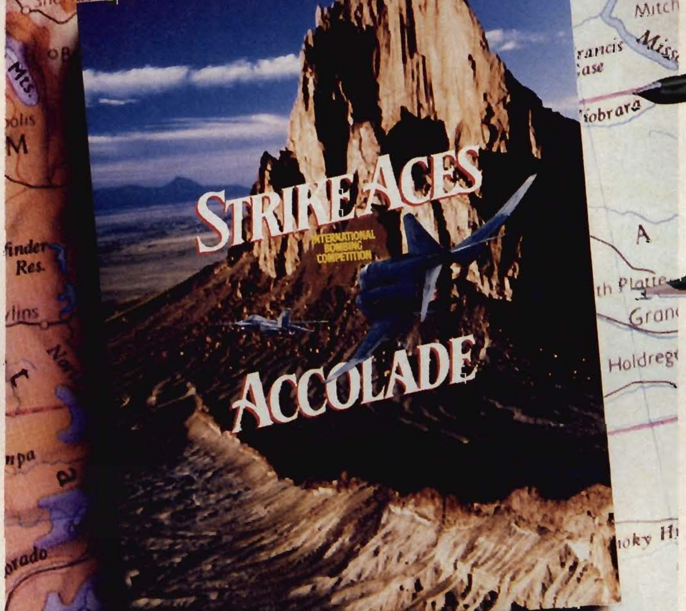
As with *DeskMate, GEM's* simplicity proves a mixed blessing. In time, you may want more control over the look of the screen, over its colors as well as window contents. You may also want access to additional DOS housekeeping functions. Although the Desktop's menu choices include DELETE, RENAME, and FORMAT, access to other commands (like TYPE or CHKDSK) would

Drop Everything.


EXPLOSIVES

Bombs. Mavericks and Sidewinders. Paveway II's, JP 233's and Durandals. With *Strike Aces,*™ you'll drop potent payloads from 6 of the world's most powerful strike aircraft.


AUTO-ARM
CLEAR
END
Paveway II
INFO
18380 LBS


STRIKE ACES
INTERNATIONAL BOMBING COMPETITION
ACCOLADE

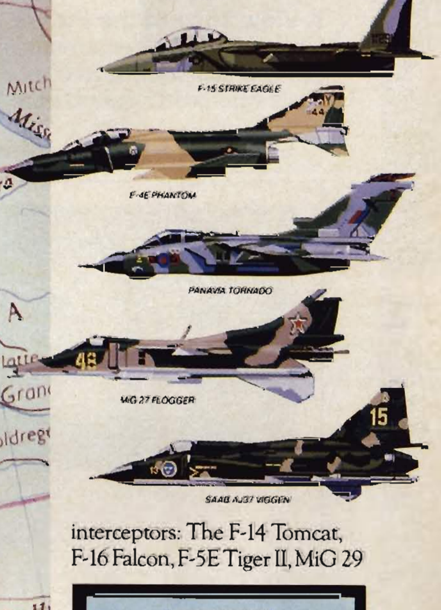
You are one of the ace combat pilots from NATO and Warsaw Pact nations, assembled on a remote air-strip in South Dakota to answer one question.

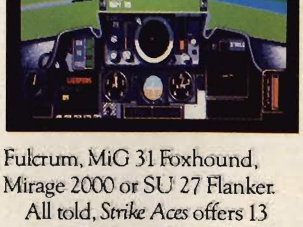
Who is the world's top bombing squadron?

The SAC bombing competition will decide the issue. Sixteen precise missions, or those you construct with the "Mission Design" feature, will determine who goes home with military aviation's most coveted prize — the Curtis E. LeMay trophy.

Customize or auto-arm each strike aircraft with a devastating warload. Pilot an F-111F Aardvark, F-15 Strike Eagle, F-4E Phantom, Panavia Tornado, MiG 27 Flogger or a Saab AJ37 Viggen — taking out targets and taking on bogeys.

Bogeys? You bet. Engage in air-to-air combat with seven deadly interceptors: The F-14 Tomcat, F-16 Falcon, F-5E Tiger II, MiG 29 Fulcrum, MiG 31 Foxhound, Mirage 2000 or SU 27 Flanker.

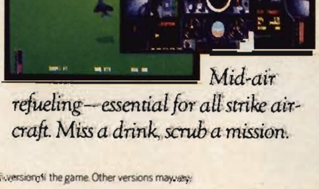

F-111F AARDVARK
F-15 STRIKE EAGLE
F-4E PHANTOM
PANAVIA TORNADO
MiG 27 FLOGGER
SAAB AJ37 VIGGEN



All told, *Strike Aces* offers 13 international warplanes performing with unsurpassed, polygon-fill realism. So don't be surprised when something else drops.

Your jaw.

How to order: Visit your favorite retailer or call 800-245-7744.



Mid-air refueling — essential for all strike aircraft. Miss a drink, scrub a mission.

ACCOLADE™

The best in entertainment software.™

Actual game screens from IBM PC VGA/MCGA version of the game. Other versions may vary.

Circle Reader Service Number 161

prove helpful in future updates.

Inexplicably, *GEM* doesn't exploit expanded memory. This omission surely exacts a performance penalty when operating powerful applications like Bitstream's *Fontware for GEM*, Xerox's *Ventura Publisher* 1.1, Inset Systems' *HiJack*, and Precision's *Superbase*. In addition, future *GEM* upgrades should incorporate more menu headings and more menu options, multiple and movable windows, improved memory management, and control over screen attributes.

GEM provides a satisfying, if less than state-of-the-art, interface. Some technical tweeking and a few more thoughtful features could make it a major contender once again.

> Experienced DOS users have little need for a GUI, just as an experienced chef has little need for a talking toaster. But if you can afford the software and have the hardware, it's an innocent, and forward-looking, pleasure.

A View Toward the Future

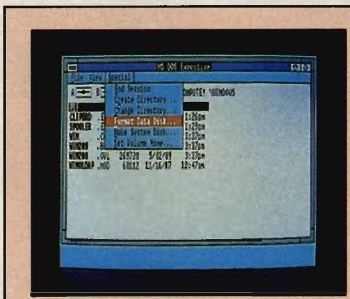
No other graphics environment holds out as much promise as does *Windows*. Microsoft's mainstream GUI may become the software skyrocket of the early nineties, provided version 3.0 proves to be more than just old wine in a new bottle.

In the meantime, users of version 2.11 must overcome some shortcomings to get the most out of this interface. The most glaring of these is the MS-DOS Executive screen, probably the most maligned opening screen of any program in recorded history. *Windows* represents itself as graphic-based, but the MS-DOS Executive consists primarily of columns of filenames.

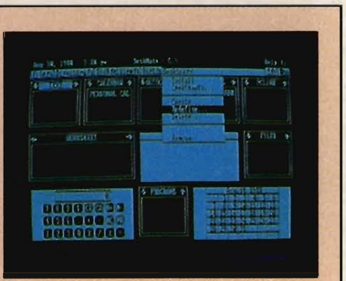
You start all applications from the Executive screen by double-clicking on the program's name. This includes the seven built-in desktop accessories, which include a clock, calendar, notepad, and terminal program. Oddly, although *Windows* employs the metaphor, it doesn't offer a desktop.

On an AT or 386, *Windows* runs with acceptable enthusiasm and in direct proportion to the amount of expanded memory your computer has and to your hard disk's access speed.

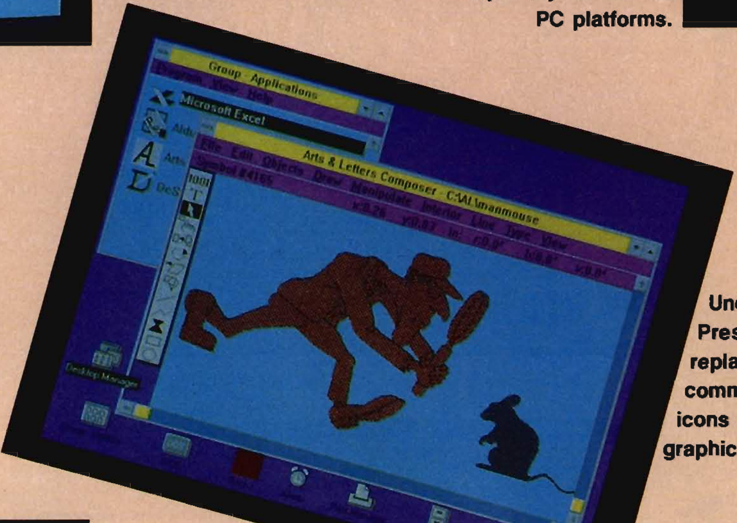
Windows/286 delivers task-switching by swapping out active applications to disk or to expanded memory. *Windows/386* provides multitasking by utilizing the 386 chip's ability to create protected memory segments. Called *virtual machines*,



The *Windows* GUI launches applications from the MS-DOS Executive.

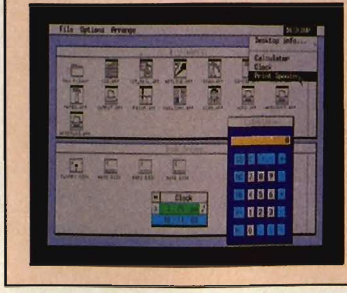


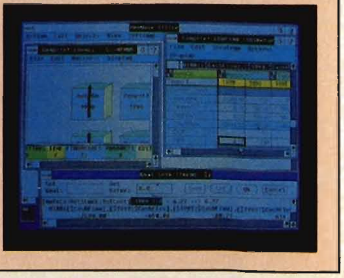
***DeskMate* provides a task-switching capability to low-end PC platforms.**



Under OS/2, Presentation Manager replaces the DOS command line with icons and a colorful graphics display.

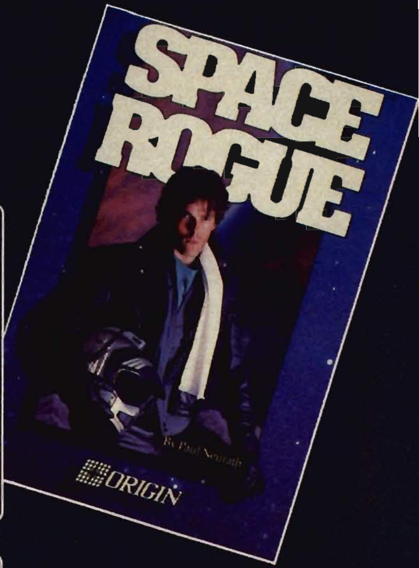
GEM designates directories or subdirectories as folders.





***NewWave* joins applications with dynamic links that update information.**

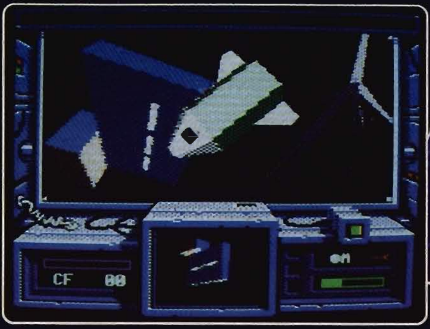
5000 YEARS OF ADVENTURE!

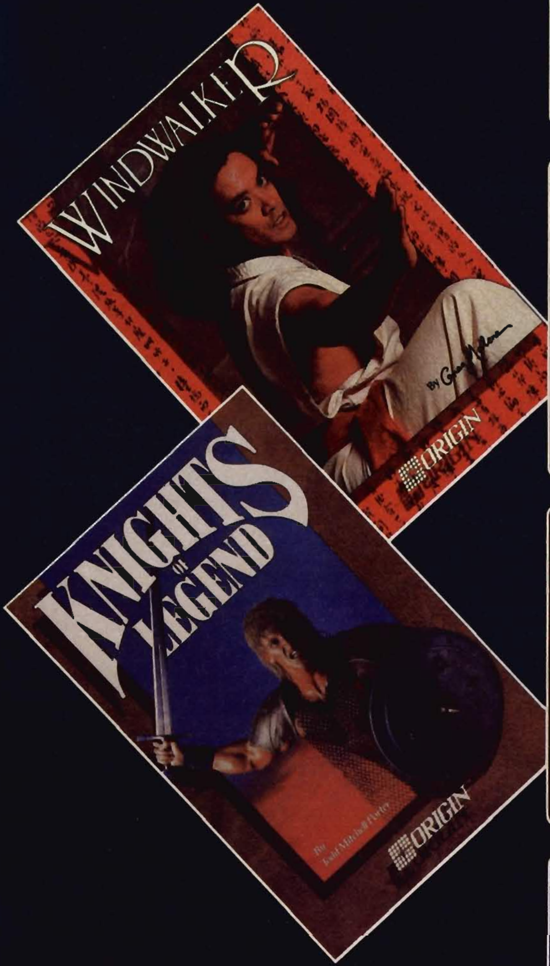

SPACE ROGUE
By Paul Neurath
ORIGIN

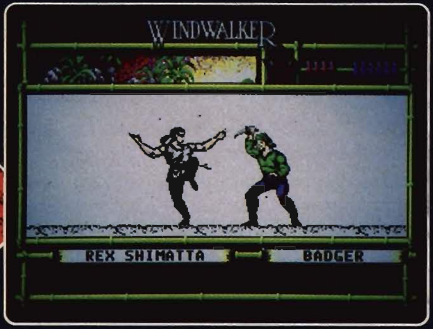
FAR INTO THE FUTURE:

Zip through the deep space of the Far Arm in a dazzling 3D space flight simulation and role-playing odyssey.

Suggested retail price: ***$49.95***



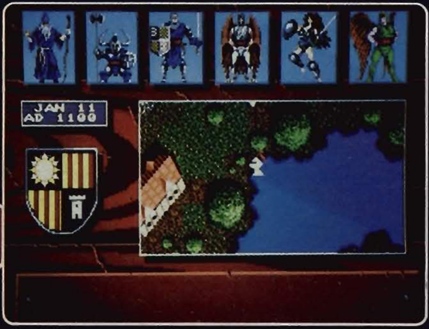

WINDWALKER
By Greg Malone
ORIGIN
KNIGHTS OF LEGEND
By Todd Mitchell Porter
ORIGIN


WINDWALKER
REX SHIMATTA
BADGER

THE ANCIENT ORIENT:

Master the martial arts as you explore the fascinating culture, intriguing events and diverse personalities of the Orient.

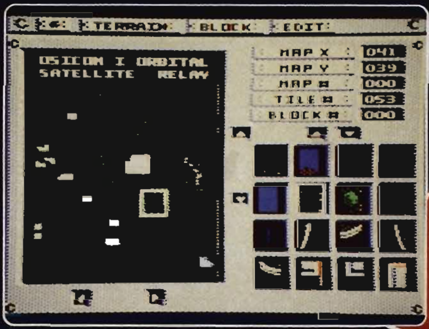
Suggested retail price: ***$39.95***


JAN 11
AD 1100

THE MEDIEVAL YEARS:

Face Ashtalarea's terrifying foes and meet hundreds of colorful personalities in this game that was eight years in the making.

Suggested retail price: ***$49.95***


TERRAIN
BLOCK
EDIT

OSICOM I ORBITAL SATELLITE RELAY
MAP X : 041
MAP Y : 039
MAP # : 000
TILE # : 053
BLOCK # : 000

OMEGA
Stuart B. Marks
ORIGIN

THE ERA OF CYBERNETICS:

Shape combat's destiny, striving to design the artificial intelligence and chassis for the world's ultimate cybertank.

Suggested retail price: ***$49.95***

Now available for IBM-PC/Tandy/compatibles, Commodore 64/128 and Apple II series. Some titles available in other popular machine formats. Check for specific availability. Actual screens may vary.

ORIGIN™

We create worlds.™

P.O. Box 161750 • Austin, Texas 78716 • 1-800-999-4939 each window allocates the application running in this protected mode up to 640K of expanded memory.

To use *Windows/286,* you need an AT with 512K of RAM, a hard disk, and EGA or better graphics. For improved performance, Microsoft recommends one megabyte of expanded memory. *Windows/386* requires a 386-based system with 640K running DOS 3.1 or higher, a hard disk, EGA or better graphics, and two megabytes of extended memory. A fast hard disk (28 milliseconds average access time or faster) will prove a timesaver with either version.

Windows delivers two congenial and useful applications: Paint, for creating graphics, and Write, a word processor. Graphics created with Paint can be integrated into Write documents. Write displays font sizes and attributes onscreen. It emulates WYSIWYG, but it omits features such as moving text or margins by dragging them with the mouse. (Many of the features omitted from Write can be found in Microsoft's *Word for Windows.*)

Windows has two methods of transferring information between programs: the Clipboard and Dynamic Data Exchange (DDE). With the Clipboard, you can move data between active *Windows* applications. To move a graphic image from Paint to Write, for example, you must open and close both applications. DDE improves on the Clipboard's performance by sharing data between active and nonactive applications. For example, you can link *Excel's* spreadsheet data to a text document residing in *Word for Windows.*

Some earlier versions of *Windows* 2.0 may still be around. Technically, this version will run on a PC or an XT. But you need to start your application before sunrise to finish by midnight.

Windows' standardized graphical interface is easy on the eyes and remains consistent across dissimilar applications. If your machine contains extended memory, *Windows/386* memory-management techniques enable swapping data to this fast-acting memory rather than to disk. *Windows/286* uses expanded memory only. SMARTDrive, another utility, caches disk reads/writes to save even more milliseconds.

Within *Windows,* you have two ways of running DOS programs. The recommended method is to establish Program Information Files (PIF). A PIF gives *Windows* key information (name, location, size in kilobytes) about your DOS program. By preconfiguring DOS applications with PIFs, you significantly enhance your chances that they will operate without problems.

The second method involves running the non-*Windows* program from the MS-DOS Executive window by clicking on the application's executable file (marked with a COM or an EXE extension). It has been my experience that running an unconformed application in *Windows* usually validates one of Murphy's Laws: "Of two possible occurrences, only the undesired one will occur."

The computer-industry trade press has reported that Microsoft plans to ship a new version of *Windows* in late May.

Riding the Crest

If you like *Windows,* you'll love Hewlett-Packard's *NewWave.* It's pure graphics—fast and dynamic. But one glance at the system requirements reveals why *NewWave* delivers the kinds of features no other GUI can.

First, you need *Window/286* running on an AT or a 386 machine. (Hewlett-Packard says it will ship a version for *Windows* 3.0 within 90 days of Microsoft's launch of that product.) Back that up with a minimum of three megabytes (preferably four) of LIM 4.0 expanded memory or four megabytes of free extended memory. (*NewWave* converts extended memory into usable expanded memory.) Rounding out your minimum *NewWave* system are 12 megabytes of hard disk space; an EGA or VGA card with appropriate monitor; a high-density floppy disk drive, either 5¼- or 3½-inch; DOS 3.2 or higher (but not 4.0); and a mouse.

And what do you get for spending as much on computer hardware as some people spend on a house? Everything.

NewWave's opening screen, the Office, offers a complete set of desktop utilities, including filing aids, trash basket, calculator, and printer

New Kid on the GUI Block

You can't be all things to all people, but not all people need or want expensive, ultra-powerful PCs, much less expensive memory-hungry operating systems.

That at least is the philosophy underlying a supersecret product in development for three years at Berkeley Softworks. The company, best known for its GEOS series of graphical interface environments and applications for the Commodore 64 and Apple II, is preparing to enter the PC marketplace.

In a big way.

Set for June release, the new product, unnamed at press time, is nothing less than a complete graphical operating system, with applications, for the PC.

For *all* PCs.

"The goal we set ourselves was an effective environment that would run on the existing installed base of 8088 machines," says Brian Dougherty, CEO of Berkeley.

What's surprising is that the inspiration for Berkeley's new product is nothing less than OS/2, which definitely *won't* run on an 8088 PC. (Naturally, Berkeley's product runs on 286 and 386 machines as well.)

In many ways, the Berkeley product beats both OS/2 and *Windows* at their own games. Berkeley promises to provide a full graphical interface, true multitasking, tear-off menus which can be positioned anywhere on the screen (and held there by an electronic metaphor that is both effective and amusing), as well as several strong and fully realized applications.

The interface itself can be configured in a variety of ways, depending on the user's preferences.

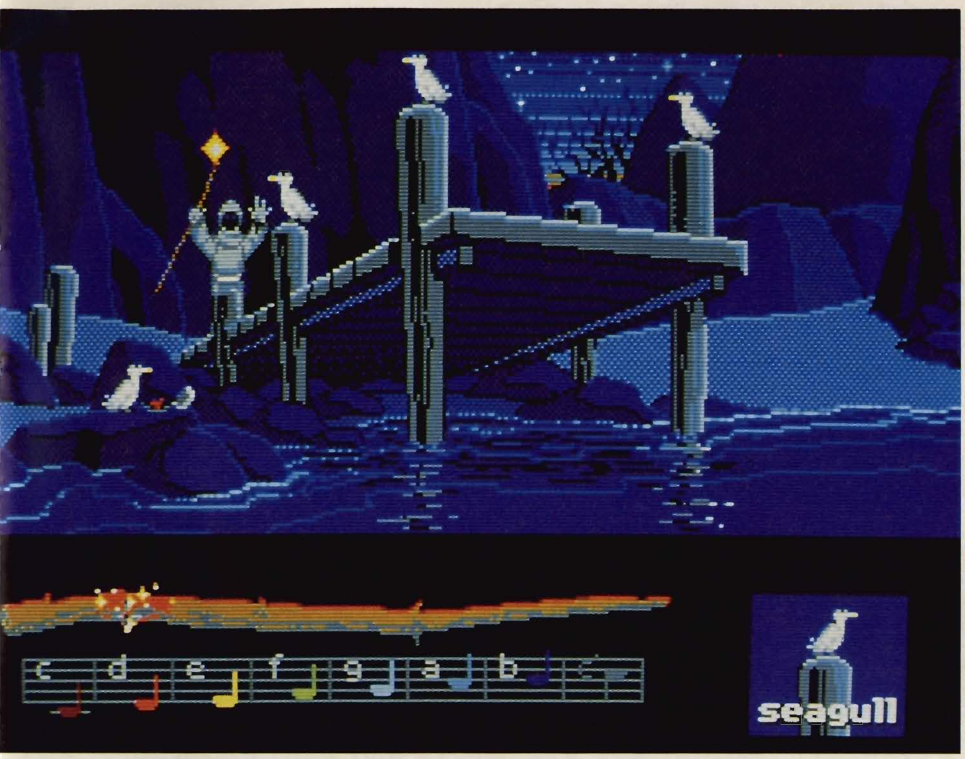
"There is no reason in the world why a standard PC can't have just as effective a graphical environment as a 386 with lots of memory," Dougherty says. "It's far too early to write off the 8088-based machines, especially now that prices are dropping so dramatically."

Having seen the program in operation, I can say the Berkeley team met or even exceeded its goals. The new product will be named shortly and should be priced at well under $200.

Keep your eyes peeled for more information about this product. I assure you, it's a real eye-opener.

— Keith Ferrell

LUCASFILM™ ON THE ART AND SCIENCE OF ENTERTAINMENT



The game is fantasy. The interface is magic.

Alone on a craggy hilltop, high above an island shrouded in perpetual mist, your quest begins. But tread gingerly, because while the world of *Loom*™ is breathtakingly beautiful, unspeakable danger awaits the unsuspecting.

Trepidation soon gives way to bravado as you peek inside abandoned tents in the village. Stumbling over a discarded weaver's distaff, you watch in wonder as it gradually glows and resonates with a sequence of musical notes. Tentatively at first, you point the staff and repeat the notes. After considerable experimentation, you may discover the power to see in the dark. Or weave straw into gold. And eventually find the means to leave the island itself.

Not all the Guilds welcome strangers.

A spell weaver's power is not for the sheepish.

A fantastic odyssey ensues, as menacing waterspouts, merciless dragons and exotic cities draw you deeper and deeper into the fantasy. Armed with the distaff's magic power, you stride fearlessly across vast, cinematic landscapes. Seeking the arcane knowledge possessed by the Great Guilds, accumulated and refined since the dawn of time.

Typing is banished from this kingdom.

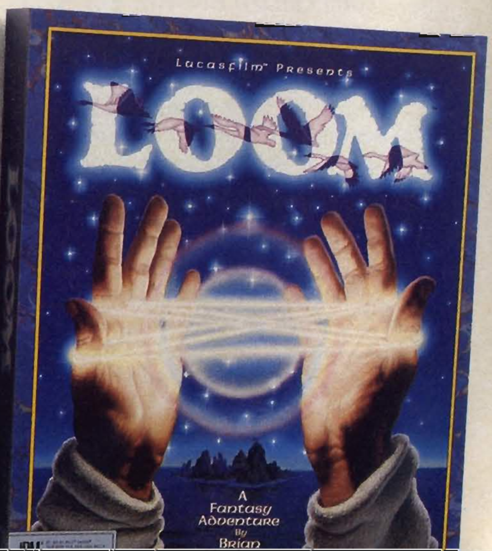
Loom is more than a masterpiece of fantasy storytelling. With *Loom,* Lucasfilm™ Games literally redefines the fantasy computer game experience. Simple point n' click actions move your character, select objects, and perform magic. No cumbersome keystrokes, text parsing, maze mapping, or inventory management intrude to break the spell.

We even transport you to the Age of the Great Guilds before you turn on the computer. With a lavishly produced, 30-minute drama on Dolby® Stereo audio cassette that's included with the game. Recorded by Lucasfilm's Academy Award-winning Sprocket Systems, it introduces the characters and sets the scene for the impending, epic struggle against imposing odds.

Then it's full immersion into *Loom*'s 3-Dimensional, scrolling panoramic landscape. Where detailed animation, high definition graphics, startling special effects and stirring musical score combine to create a total environment. Captivating you from the opening scene to the final climax.

And your quest for a truly magical fantasy adventure is finally realized.

LUCASFILM™ GAMES



Available on IBM®/Tandy®, Amiga®, and Atari ST® personal computers. Order direct by calling 1-800-STARWARS (1-800-782-7927) in the USA. In Canada, call 1-800-828-7927. ©1990 LucasArts Entertainment Company. All rights reserved. Lucasfilm Games and Loom are trademarks of LucasArts Entertainment Company. IBM is a trademark of International Business Machines Corporation. Tandy is a trademark of Tandy Corp. Amiga is a trademark of Commodore-Amiga, Inc. Atari and ST are trademarks of Atari Corp. Dolby is a registered trademark of Dolby Laboratories Licensing Corporation.

Circle Reader Service Number 103

control. You move about the Office with a mouse in the usual manner; for example, to delete a file, you highlight it by clicking on its icon and then drag it to the trash basket. You copy and move files in similar fashion, or print a document by dragging it to the printer icon.

Hewlett-Packard bundles its WYSIWYG word processor, Write, with *NewWave*. Write takes full advantage of *NewWave's* numerous features for advanced text formatting, and it integrates text, spreadsheets, and graphics from linked applications. You move, cut and paste, reformat, and change fonts as well as text size and attributes by marking the text with the mouse. Write includes a spelling checker but omits a thesaurus.

The *NewWave* Office environment consists of two components: objects and agents. Objects consist of executable applications (EXE and COM files), along with the files they create (documents). You specify the icons and descriptive labels which, in turn, represent objects.

By clicking on an object's icon, you start the executable application and the files you have associated with it. For instance, clicking on a document's icon starts the word processor and simultaneously opens up the file.

A major *NewWave* advance is in the realm of relational word processing. *Relational* usually applies only to databases and spreadsheets: In relational record- or cell-based applications, what happens in one cell (or field) affects data in another. Document-based applications, like word processors, rarely contain hot links to other files. To update data, you must cut and paste or merge.

By clustering several applications and documents into one folder, *NewWave* lets you create multiple-source (compound) documents. For example, if you write reports that include text from your word processor, data from a spreadsheet, graphics from a paint program, imported scanned images, and even mail lists from a database, *NewWave* links these together under one umbrella.

When you click on that compound document, *New Wave* executes all of the applications and files contributing data to that folder. It searches through the other supporting documents for changes, then updates the open document with the latest data.

Agents are highly sophisticated macros that link source and destination objects together. By linking multiple *NewWave* objects, agents create multiple compound documents.

For example, you can create an agent to call a branch office, download sales figures, transfer these figures into *Lotus 1-2-3,* reorder depleted inventory, print out an executive summary of the data (including graphs) and E-mail that summary. (I'm not saying this is easy; I'm saying it's possible.)

This admittedly complex example hints at *NewWave's* targeted market. If your needs are far below this level of sophistication, then consider a less demanding GUI.

Still the Loneliest Game in Town

Although OS/2 with Presentation Manager (OS/2 PM) wants to be your next operating system, version 1.2 conveys a mixed message to would-be users. It's laden with indispensable features, options, and functions; but it lacks the intuitive file-management techniques and easygoing grace of other GUIs.

Whether you want OS/2 PM on your PC depends on whether you own an AT-class or (preferably) a 386 computer, a fast hard disk (less than 28 milliseconds access time) with at least 12 megabytes of free space, EGA or better graphics support and monitor, and a minimum of 2½ megabytes of expanded or extended memory.

> Despite OS/2's faults, it will inevitably supplant DOS. OS/2 will prevail because it's a better product—an operating system that serves the needs of future computer users, not the needs of the past.

Functionally, OS/2 eclipses DOS in all respects. It delivers a full graphics interface (OS/2 is the operating system; Presentation Manager is the GUI). Master mousers can custom tailor OS/2's windows in any of a dozen ways, including resizing, opening/closing, or moving to any screen location. Multiple files may be copied, moved, or deleted by keyboard commands or by using the mouse.

For 386 users, OS/2's most important features are multitasking and the ability to directly exploit extended memory. Newer versions of OS/2 will address the 386 chip's 32-bit registers, resulting in significantly increased data throughput.

For all of OS/2 PM's many strengths, however, it lacks a natural feel. For example, to delete a file in OS/2, you first highlight the file; then activate the menu's Delete command. While logical, these actions don't reflect our habits. Nobody deletes rubbish; it's thrown out.

Conversely, for longtime DOS users, OS/2 introduces many outstanding innovations. My personal favorite is OS/2's victory over DOS's limited 11-character filenames. OS/2's High Performance File System (HPFS) permits filenames up to 254 characters long. Unfortunately, technical considerations decree that DOS files cannot coexist on the same logical disk with HPFS files.

Stepping through OS/2 PM's nested menus with a mouse will prove time-consuming until you become familiar with each function's location in the hierarchy. Keyboard equivalents exist for all commands, but entering commands is awkward. Online help renders straightforward and lucid assistance.

OS/2's dilemma is that it must spawn new applications even as relatively few buyers exist. No easy task, not even for Microsoft and IBM. Industry experts suggest that DOS programs will fade gradually over the next decade. But with an estimated 20 million 8088 and 8086 machines in use today, it's sure to be a slow fade.

Command Line Commandos

Social and physical scientists agree that two elements on this world are universal: hydrogen and confusion. The world of GUIs is no different: a lot of hot air and little agreement.

DOS stalwarts equate the ability to manipulate the C> prompt with a mortal's mastery of The Machine. The GUI generation, conversely, just wants to get from here to there.

The five most popular GUIs on the PC range from simple to complex, and each attempts, in its own way, to solve DOS's deficiencies. Keep in mind your own aims, and your computer's capabilities, during your own GUI exploration. The interface you adopt (and it's only a matter of time until you do adopt one) will govern the way you and your PC work together—and that's no small matter. ⊡

Howard Millman works for Columbia University in New York and frequently contributes to several national computer magazines.

MY VIEW

BRIAN DOUGHERTY

POWER TO THE PEOPLE

The microcomputer industry in the 1980s saw enormous growth, turmoil, shakeout, and ultimately success in penetrating and nearly saturating the corporate market. But with the exceptions of Tandy (a special case) and Apple (which has reoriented itself to the corporate marketplace), the companies that sparked mass-market computing—Commodore, Atari, Timex, Texas Instruments, and Sinclair—have all stumbled or fallen by the wayside.

There's no consensus as to who will lead or what the path will be to mass-market computing in the 1990s. For those companies, like Berkeley Softworks, whose primary goal is to make computing, in its broadest sense, a truly mass-market phenomenon, the second decade of microcomputing offers particular challenges. The paramount challenges: delivering ease of use and picking the right hardware platform.

The microcomputer is the most complex device ever to have entered a mass retailer's store. Its ability through software to become a game machine, productivity tool, telecommunications terminal, fax machine, command and control device, and so on holds enormous promise. Yet the blizzard of application products, often with hard-to-use interfaces, has intimidated many potential customers. Ease of use remains the largest barrier to mass-market success.

Ease of use is a relative concept. The Macintosh and *Windows* are easy to use compared to command line interfaces. But they're not easy for someone in a small business or home who has no access to training and just wants to use an electronic calendar/address book, write a memo, or send a fax. The solution isn't as simple as making everything easier. While a scripted, sequential interface that walks the user through each step might be easy for a naive user, it becomes tedious and frustrating as a user's skills and aspirations grow.

What we need to open up the mass market is a Scalable GUI (SGUI), a GUI that allows the same applications to be accessed at various user-selectable levels of functionality. These levels range from an *appliance mode,* where users are only required to push a few buttons, to a novice computer interface (such as Tandy's *Deskmate*), to a full-fledged professional GUI like Presentation Manager.

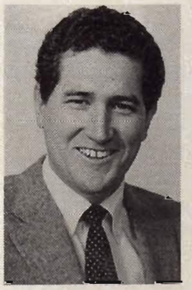
An SGUI would also allow users, as their skills and needs grow, to simply switch interface levels to access more powerful features. Ideally, an SGUI would allow users to choose among different looks (*Windows* versus Macintosh versus Next Step) and use different input devices (keyboard, mouse, stylus, touchscreen, voice, and so on) to drive the same applications at various levels.

Over the last 3½ years, Berkeley Softworks has devoted substantial resources to solving these complex interface and ease-of-use requiremens. We believe a more flexible user-interface solution is required to break open the mass market. The industry needs to offer a solution that any user can access, regardless of his or her previous experience. The solution must be able to grow with the user without requiring expensive hardware upgrades.

This leads to the second major challenge for mass-market PC success in the 1990s: the hardware/pricing equation. To date, the industry, led by Microsoft's system software requirements, has forced mass-market customers to live with hand-me-down solutions. All the innovation in the industry has occurred at the high end for the corporate market, where users can afford the expensive new machines. Efficient software development, which could bring many of these breakthroughs to low-cost mass-market machines, is rarely practiced. The message has been "If you can't afford to run with the big companies and buy new hardware every other year, you're doomed to run obsolete software." This is insane.

The potential mass market dwarfs the corporate market. Statistics show that during the 1980s, the percentage of the population employed by the Fortune 1000 companies dramatically declined. The majority of the population today is employed by small- to medium-sized businesses that can't afford to buy new hardware every other year. Add this to the consumer, home office, and K–12 educational markets, and you can see the potential. The industry needs to deliver innovative system and applications-software solutions for machines that have already been driven down the price curve.

New enabling system and application technologies targeted at the needs of the mass market will soon be available. These technologies will dramatically change the frame of possibility for low-cost, high-performance computing. The 1990s will finally see PCs deliver power to the people. ⊡



Brian Dougherty is the Chairman and CEO of Berkeley Softworks, a software developer and publisher specializing in system software and applications.

SHAREPAK

RICHARD C. LEINECKER

Because this month's In Focus theme covers graphical user interfaces, we've packed this month's *SharePak* disk with some exciting programs that serve as an interface between you and your computer.

We've screened hundreds of programs to bring you this fine collection, which illustrates some of the possibilities that wait for you when you enter the world of MS-DOS interfaces and applications.

Best of all, we've done all the legwork. There's no need for you to spend hundreds of hours hunting through the online services and mail-order catalogs for high-quality shareware. It's here on our disk, this month and every month.

AUTOCON

Many of the new MS-DOS applications place demands on our equipment like never before and stretch our machines to the far reaches of their capabilities. Because of this, and the notorious TSR collisions that occur with many applications, you need your computer configured differently at different times. It's too much of a chore to edit your AUTOEXEC.BAT and CONFIG.SYS files each time you need to change the system configuration, especially when you find yourself doing it several times each session.

AUTOCON takes the hassle out of rebooting in different configurations. It lets you create up to 50 pairs of AUTOEXEC.BAT and CONFIG.SYS files. You can pick the ones you want to run from the DOS prompt or a menu.

A setup program helps you design your files, too. And there are plenty of options (such as a choice of a warm or a cold reboot) that will help you avoid conflicts and problems on even the most out-of-the-ordinary systems. If you don't like the keystrokes that the setup program uses, you can record your own.

Once you've created your files, rebooting with a different configuration is as easy as typing AUTOCON CONFIGURATION from the DOS prompt or typing AUTOCON and picking a configuration from the menu.

SolveIt

Financial mavens take note—this program will put you far ahead of the competition. It's the type of program that won't leave you saying *I wish they had added this feature.* Instead you'll be saying *I can't think of anything else that could have been added.*

SolveIt includes a complete assortment of programs that can evaluate and assess loans, real estate investments, business profits and losses, personal net worth, personal budgets, and financial investments.

THREE PROGRAMS
THAT WILL MAKE
LIFE A LITTLE EASIER

Even this doesn't come close to telling the full story. Each of these broad categories has numerous subsections that cover the needs of just about anyone. Take, for example, the financial investment section. It includes areas such as future value, present value, daily returns, time to withdraw, and required payments.

If all this sounds hard to use, nothing could be further from the truth. An easy-to-use interface lets you breeze through all the functions. Titles clearly label each section, and data-entry fields are intelligently marked so there's no mystery about what goes there.

If you've been looking for a financial package that does it all, does it well, and does it right, this one's for you. Leap into the ranks of the chosen few who manage their money without a glitch.

The Waiter Menu System

Are you tired of typing program names when you know there has to be a better way? *The Waiter Menu System* is designed for people who want power, ease, and convenience but don't have the time or energy to become DOS experts. It's also easy to customize the program to fit your exact needs. A friendly interface and great documention are the key to this easy-to-use MS-DOS environment.

Instead of typing filenames, you highlight the program name with the cursor keys and press the Enter key. Nothing could be simpler, and you won't have to worry about misspelling the filename.

Other DOS functions are just as tame. Copying, deleting, and renaming files are easy even for a novice. And a built-in system-information function gives you information that even DOS doesn't provide. You can find out the status of parallel, serial, and game ports; how much memory is installed and how much is left; the version of DOS you have running and the type of computer you have; and much more.

And if you're worried about computer security, you can install separate passwords for each of your applications. Other users will then have access only to the applications you allow. You can even restrict their access to the DOS prompt.

If you've always wanted a more powerful, easy-to-use, and friendly computer, you'll want to give this program a try. ▣

SHAREPAK

Share in the Savings!

Only $1.99 per program!

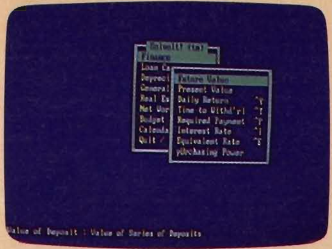
SAVE TIME—we carefully select and test all programs for you

SAVE MONEY—each disk includes two to four programs for one low price

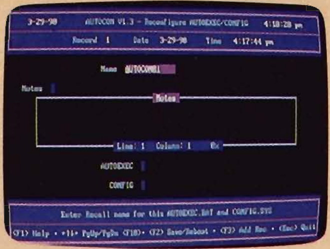
SAVE KEYSTROKES—our free DOS shell lets you bypass the DOS command line

COMPUTE!'s SharePak disk contains the best of shareware—handpicked and tested by our staff—to complement this month's In Focus topic. You'll sample entertainment, learning, or home office software at a great savings. Each *SharePak* disk includes two to four programs plus complete documentation for one low price:

$5.95 for 5¼-inch disk
$6.95 for 3½-inch disk


Finance
Loan Ca
Budget
Quit
Future Value
Present Value
Daily Return
Time to Withd'r'l
Required Payment
Interest Rate
Equivalent Rate
pUrchasing Power
Value of Deposit : Value of Series of Deposits

AUTOCON


3-29-90
AUTOCON V1.3 - Reconfigure AUTOEXEC/CONFIG
Record 1 Date 3-29-90 Time 4:17:44 pm
Name
Notes
Line: 1 Column: 1
AUTOEXEC
CONFIG
Enter Recall name for this AUTOEXEC.BAT and CONFIG.SYS
<F1> Help

Solve It

Rick's Menu System
RCL's Main Menu
Directory
Read Docs
Test Selection
F1=HELP
Thu Mar 29, 1990
4:16:32pm

The Waiter Menu System

For even more savings, Subscribe to the *SharePak* and receive COMPUTE!'s *SuperShell* FREE!

For a limited time, you can subscribe to *COMPUTE!'s SharePak* and save more than 37% off the regular cost of the disks—plus get COMPUTE!'s *SuperShell* **FREE.** With a one-year paid subscription, you'll get

- A new 3½- or 5¼-inch disk delivered to your home every month
- Savings of over 37% off the regular disk prices
- Advance notices of COMPUTE! special offers
- COMPUTE!'s *SuperShell* at no additional cost!

Subscribe for a year at the special rates of $59.95 for 5¼-inch disks and $64.95 for 3½-inch disks—**and get COMPUTE!'s *SuperShell* FREE!**

FREE with paid subscription!

With *SuperShell*, COMPUTE!'s new MS-DOS enhancement program, you can copy, rename, move, delete, edit, print files, and call up online help with just a few keystrokes. Or point and click if you have a mouse. Change attributes, back up disks, customize parameters, execute DOS commands, and more without ever accessing the DOS command line. All this plus more is FREE with a paid subscription to *COMPUTE!'s SharePak*.

For Single Disks

YES! I want to share in the savings. Send me the June 1990 issue of *COMPUTE!'s SharePak* disk. I pay $5.95 for each 5¼-inch disk and $6.95 for each 3½-inch disk plus $2.00 shipping and handling per disk.

Please indicate how many disks of each format you'd like:

_____ 5¼-inch at $5.95 each   _____ 3½-inch at $6.95 each

_________ Subtotal
_________ Sales tax (Residents of NC, NY, and PA please add appropriate sales tax for your area)
_________ Shipping and handling ($2.00 U.S. and Canada, $3.00 surface mail, $5.00 airmail per disk)
_________ Total enclosed

Subscriptions

I want to save even more! Start my one-year subscription to *COMPUTE!'s SharePak* right away. With my paid subscription, I'll get a FREE copy of COMPUTE!'s *SuperShell* plus all the savings listed above.

Please indicate the disk size desired:

_____ 5¼-inch at $59.95 per year   _____ 3½-inch at $64.95 per year

For delivery outside the U.S. or Canada, add $10.00 for postage and handling.

Name _______________
Address _______________
City _______________
State/Province _______________ ZIP/Postal Code _______________
Total Enclosed _______________
_____ Check or money order _____ MasterCard _____ VISA
Credit Card No. _______________ Exp. Date _______________
Signature _______________
(Required)
Daytime Telephone No. _______________

Send your order to *COMPUTE!'s SharePak*, P.O. Box 5188, Greensboro, North Carolina 27403.

All orders must be paid in U.S. funds by check drawn on a U.S. bank or by money order. MasterCard or VISA accepted for orders over $20. This offer will only be filled at the above address and is not made in conjunction with any other magazine or disk subscription offer. Please allow 4–6 weeks for delivery of single issues or for subscription to begin. Sorry, but telephone orders cannot be accepted. This offer expires July 31, 1990.

COMPUTE!'s *SuperShell* requires DOS 3.0 or higher.
Disks available only for IBM PC and compatible computers. Offer good while supplies last.

BUYER'S GUIDE

LIZ CASEY AND MICKEY McLEAN

DO YOU TIRE OF YOUR HO-HUM SCREEN DISPLAY? WOULD YOU LIKE TO SEE ON YOUR SCREEN WHAT YOU GET IN YOUR PRINTOUT? ARE YOU READY FOR THE EASE AND POWER OF *WINDOWS, GEM, NEW WAVE, DESKMATE,* AND PRESENTATION MANAGER? IF YOU USE A GRAPHICAL USER INTERFACE (GUI), YOU'LL FIND SOMETHING TO LIKE IN THIS GUIDE TO

GRAPHICAL USER INTERFACE APPLICATIONS

DESKMATE

Memory requirements, when available, have been provided. At press time, we were unable to verify memory requirements for some products.

BUSINESS AND PRODUCTIVITY APPLICATIONS

DacEasy Accounting
DacEasy
640K
$99.95

Designed for the growing business, *DacEasy* features seven integrated modules, including Accounts Payable, Accounts Receivable, and Inventory. The package also offers context-sensitive help, multiple-company capability, and departmentalization.

DeskMate Form Finisher
Power Up
512K IBM/Tandy, 384K Tandy 1000 TL/SL
$39.95

With *DeskMate Form Finisher,* filling out preprinted forms with the computer eliminates the inconveniences of typewriters. Simply tell the program what your preprinted form looks like, save that information, enter the data field by field, and print your form.

DeskMate Q & A Write
Symantec
512K (640K recommended)
$149.95

DeskMate Q & A Write word processor features multicolumn and label printing. The program also includes advanced search and replace, built-in font support, mail-merge capabilities, and an integrated spelling checker. Symantec offers telephone technical support and bulletin board system support.

DeskMate Thesaurus Companion
Tandy
256K
$29.95

DeskMate Thesaurus Companion from Tandy provides over 220,000 words to meet your writing needs.

Homeword II
Sierra On-Line
512K
$69.95

Homeword II word processing program offers a thesaurus, graphic integration, and a run-time spelling checker. In addition, the program features text screens, pull-down menus, dialog boxes, outlining, and cut-and-paste capabilities.

Instant Pages
Electronic Arts
256K
$44.95

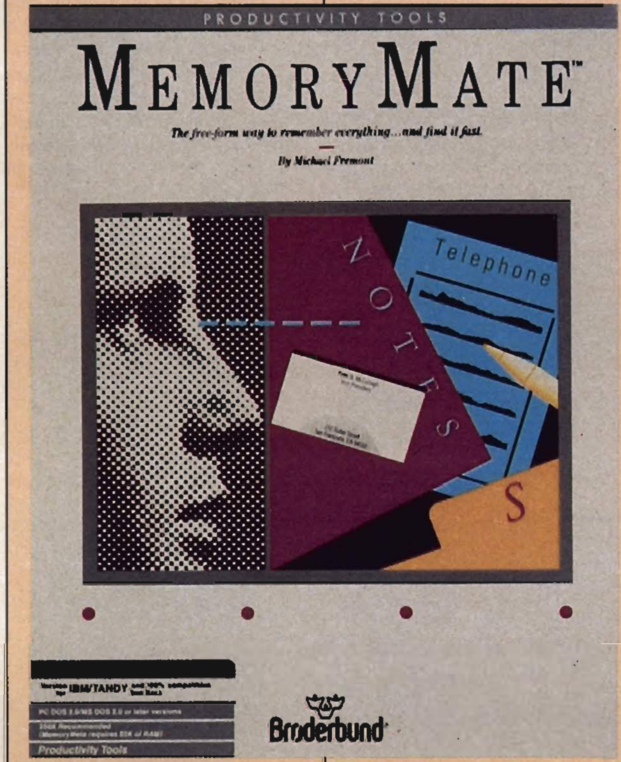
Instant Pages, from Electronic Arts, combines word processing capabilities like block move, copy and paste, and line and box drawing with over 100 ready-to-use forms.

Lotus Spreadsheet for DeskMate
Lotus
512K (640K recommended)
$219.95

Pull-down menus and pop-up dialog boxes guide you through *Lotus Spreadsheet for DeskMate*. The program features an 8192 rows × 256 columns worksheet, protected cells, direct printing of graphics from a spreadsheet, and full mouse support. Lotus offers technical phone support.

MemoryMate
Brøderbund
256K
$69.95

MemoryMate from Brøderbund helps remove some of the clutter from your desk. Enter notes, phone numbers, dates and thoughts into *MemoryMate* and retrieve them at any time through its automatic cross-indexing. The memory-resident program features pop-up reminders so you won't forget deadlines and meetings.



PFS: First Publisher
Software Publishing
640K (hard disk recommended)
$129.00

Software Publishing's *PFS: First Publisher* helps you produce unique documents with flexible page layout, versatile editing options, and customized graphics. The program offers online help, design tips and templates, and over 60 fonts.

Quicken
Intuit
512K
$59.95

Quicken helps you manage your home and small-business finances. The program features tax recordkeeping, bill paying, and financial management. And because it works like a paper checkbook, you don't need to learn accounting language.

Venture
Star Software Systems
512K
$349.00

Venture business-management software features a word processor, a spreadsheet, a file manager, and a general ledger. The program also offers a business-plan builder and sample financial reports, business documents, and agreements.

COMMUNICATIONS/ CONNECTIVITY

PC-Link Online Information Service
Quantum
384K
$29.95

PC-Link Online Information Service offers news, airline reservations, stock market quotes, and support from Tandy and *DeskMate* experts. The monthly rate is $9.95, and the software includes one free month of service.

Sierra's On-Line
Sierra On-Line
512K
$69.95

Sierra's On-Line telecommunications software features a push-button interface, pull-down menus and easy-to-follow lessons. In addition, *Sierra's On-Line* offers AutoLogOn files for instant access to information services, split-screen conference mode, 11 transfer protocols, and a host mode to receive calls.

EDUCATIONAL APPLICATIONS

The Children's Writing & Publishing Center
The Learning Company
384K
$69.95

The Children's Writing & Publishing Center features word processing that helps students build written-communication skills. The program features online instructions and over 150 graphic images; words and images combine easily. The Learning Company recommends this program for grades 2 and up.

KIDTALK
First Byte
512K
$39.95

KIDTALK lets you type in any word, number, or sentence and hear it spoken back to you in either a male or a female voice. You can customize the voice by picking tone, pitch, speed, and volume. *KIDTALK* helps students proofread and create their own Pronunciation Dictionary and Secret Codes.

MathTalk
First Byte
384K
$39.95

MathTalk helps students with addition, subtraction, multiplication, and division. The program features a Talking Calculator and two math games, Mystery Number and Table Talk. The program helps students until they can solve each problem correctly.

SchoolMate
Tandy
640K
$999.95

SchoolMate is a multifaceted network for teachers and students that replaces commands with pop-up dialog boxes and pull-down menus. The network basic package includes classroom-management tools to help teachers set up a roster, manage assignments, grade, and prepare exams.

Speller Bee
First Byte
256K
$39.95

Speller Bee lets you create your own spelling list and helps you until you have correctly spelled a word; then the program gives you practice. *Speller Bee* features different levels of difficulty, grade-level spelling lists, and three games that challenge you to recognize scrambled and hidden words.

ENTERTAINMENT APPLICATIONS

Music Studio 3.0
Activision
512K
$99.95

Music Studio 3.0 lets you opt to create your own music or to listen to preprogrammed selections. The program features realtime MIDI input/output, an option to design your own instrument, and the tools necessary to compose, edit, and play original music.

PUBLISHING/ GRAPHICS APPLICATIONS

PaintShow Plus
Logitech
640K
$79.00

PaintShow Plus is a complete paint program, featuring scanner support and CGA, TGA, EGA, and VGA modes. Create or edit standard graphics files or enhance charts from other programs like *Lotus 1-2-3;* generate slide shows and other presentations for business or school.

Print Magic
Epyx
512K
$55.95

Create cards, announcements, and flyers with *Print Magic*. The program lets you combine text and graphics anywhere on the page. Invert, enlarge, resize, or flip the image to fill your page. ▷

UTILITIES

Backup Pro
Software Toolworks
640K
$69.95

Backup Pro backs up as much as 10MB in as little as four minutes. The program's data security makes *Backup Pro* a safe backup utility.

Utilities!
POP Computer Products
384K
$49.95

Utilities! offers a variety of file- and disk-management tools. The package features Retrieve, a program to avoid accidental file deletion; Txtfind and Whereis, which locate text and files; and 15 other programs that support both the keyboard and mouse.

DESKMATE CONTACTS

For more information about the Tandy DeskMate *products listed in this buyer's guide, contact the following companies.*

Activision
3885 Bohannon Dr.
Menlo Park, CA 94025

Brøderbund
17 Paul Dr.
San Rafael, CA 94903

DacEasy
17950 Preston Rd.
Suite 800
Dallas, TX 75244

Electronic Arts
1820 Gateway Dr.
San Mateo, CA 94404

Epyx
600 Galveston Dr.
Redwood City, CA 94063

First Byte
3333 E. Spring St.
Suite 302
Long Beach, CA 95054

Intuit
540 University Ave.
Palo Alto, CA 94301

The Learning Company
6493 Kaiser Dr.
Fremont, CA 94555

Logitech
6505 Kaiser Dr.
Fremont, CA 94555

Lotus
55 Cambridge Pkwy.
Cambridge, MA 02142

POP Computer Products
P.O. Box 1833
Evergreen, CO 80439

Power Up
2929 Campus Dr.
San Mateo, CA 94403-7660

Quantum
8619 Westwood Center Dr.
Suite 200
Vienna, VA 22180

Sierra On-Line
P.O. Box 485
Coarsegold, CA 93614

Software Publishing
1901 Landings Dr.
Mountain View, CA 94039

Software Toolworks
19808 Nordhoff Pl.
Chatsworth, CA 91311

Star Software Systems
367 Van Ness Way
Torrance, CA 90501-1494

Symantec
10201 Torre Ave.
Cupertino, CA 95014

Tandy
1800 One Tandy Center
Fort Worth, TX 76102

WINDOWS

Memory requirements, when available, have been provided. At press time, we were unable to verify memory requirements for some products.

BUSINESS AND PRODUCTIVITY APPLICATIONS

Active Life Version 1.1
TimeStar Systems
512K
$149.00

Active Life is a time-management program for planning, managing, and tracking business and personal time. The software provides flexible schedules, pop-up calendars, alarms, and week-at-a-glance schedules, as well as other features. The package supports the *Windows/286* and *Windows/386* environments.

Amí
Samna
640K
$195.00

Amí is a *Windows*-based word processor with WYSIWYG screen display and style-sheet formatting to speed the production of business documents. It supports the *Windows/286* and *Windows/386* environments, uses RTF, and allows *Microsoft Excel* data interchange through the clipboard.

Amí Professional
Samna
640K
$495.00

Amí Professional is a sophisticated word processor that comes with a built-in thesaurus, automatic document merge, drawing capabilities, and a table maker. It supports the *Windows/286* and *Windows/386* environments, uses RTF and DDE, and allows *Microsoft Excel* data interchange via the clipboard.

Beckman Associates Thesaurus and Speller
Beckman Associates
80K
$119.95

Beckman Associates Thesaurus and Speller is a writing aid designed specifically for the *Microsoft Windows* environment. It provides spelling corrections and traditional thesaurus functions as well as dictionary-style meanings for over 40,000 words, antonyms, synonyms, related words, contrasted words, and words with comparative meanings. The program supports the *Windows/286* environment.

Current
IBM
640K
$395.00

Current is an information manager that allows you to organize and retrieve text and graphics data. It also features calculation fields, a report generator, a phone dialer, a text processor, a spelling checker, and an outliner.

The DeskTop Set
Okna
512K
$139.00

The DeskTop Set is designed for business and home use. It includes a phone book; a memory phone dialer; least-cost dialing; a phone log; a daily, a monthly, and an annual calendar; an expense ledger; a printing calculator; a file viewer; and the DeskTop Manager menu package. It runs under the *Windows/286* and *Windows/386* environments, uses EMS and DDE, and supports *Microsoft Excel* via the clipboard.

Dragnet 2.0
Access Softek
75K
$145.00

Dragnet 2.0 is a text-retrieval program that finds information about a common topic, scattered throughout many files, and collects it into a single file. Dragnet 2.0 supports multitasking with *Microsoft Excel* and *Aldus PageMaker*, as well as other *Windows* applications. It runs under the *Windows/286* and *Windows/386* environments.

Excel Reporter
Zen Software
512K
$149.00

Excel Reporter is a full-featured report-writer for *Microsoft Excel*. The package allows you to relate multiple worksheets to create custom reports, labels, and forms. Also provided are complete sorting, record filtering, and formatting. The product supports the *Windows/286* and *Windows/386* environments, supports EMS, and reads the *Microsoft Excel* file format.

File Manager
Distinct
640K
$99.00

File Manager features a show-file window, a directory-tree window, an application organizer menu, an information retrieval utility, an undelete file command, file folders, and a password lock.

FormBase
Columbia Software
640K
$495.00

FormBase combines a forms processor with a relational database manager. The program draws complex forms using the graphic capabilities of the *Microsoft Windows* environment. In addition, forms and data can be transferred (imported and exported) to other applications, such as *Microsoft Excel, Lotus 1-2-3, dBase*, and *WordPerfect*. It runs under the *Windows/286* and *Windows/386* environments.

hDC Windows Express Version 2.11

hDC Computer
640K
$79.95

hDC Windows Express lets you create your own graphical menu system. It supports the *Windows/286* and *Windows/386* environments.

hDC Windows Manager Version 1.0

hDC Computer
640K
$79.95

hDC Windows Manager is a group of system utilities and productivity tools that are user-configurable and accessible from any *Microsoft Windows* application. It comes with nine MicroApps that you can install to customize your *MS Windows* system. It supports the *Windows/286* and *Windows/386* environments.

Horizon

FormMaker Software
640K
$195.00

Horizon, a forms-automation package, provides onscreen graphics and a WYSIWYG display with a toolbox-style interface. It lets you design and fill out forms from the keyboard or by merging information from other data-file formats. It also supports a variety of output devices. The software supports the *Windows/286* environment and uses TIFF.

Legend

NBI
1MB
$495.00

Legend is a word processing program that features a WYSIWYG display and a variety of fonts, footnotes, and multicolumned formats. It can also flow text around graphics and import graphics from a variety of graphics packages.

Macintax for Windows

SoftView
640K
$99.00

Macintax for Windows is an individual income-tax preparation program that displays IRS Forms and Schedules onscreen in the actual IRS format. The program makes all tax calculations and checks all input. Eight optional state packages are also available.

MacroCalc

Anderson Consulting
$127.00

MacroCalc features math, scientific, statistical, and programming functions with more than 200 functions, 27 constants, and more than 3000 unit conversions.

Microsoft Excel Version 2.1

Microsoft
640K
$495.00

Microsoft Excel version 2.1 is a spreadsheet with business graphics and a database. It offers interactive, dynamic linking of sheets; a one-step, automatic macro recorder; high-resolution printed output; integrated onsheet database management; and customizable graphs. The program comes with the runtime version of *Microsoft Windows* and runs under the *Windows/286* and *Windows/386* environments.

Microsoft Word for Windows

Microsoft
640K
$495.00

Microsoft Word for Windows is a full-featured, graphical word processor designed specifically for the *Windows* environment. Features include compound document creation, WYSIWYG display, and the ability to reposition margins, outline headings, and graphics by dragging your mouse.

On Trak/The Information Organizer

Active Software
640K
$195.00

On Trak/The Information Organizer is an information manager with a Rolodex-like user interface. This application supports the *Microsoft Windows* environment version 2.*x* and uses EMS.

Opening Bell

A-T Financial Information
$375.00

Opening Bell is a realtime stock market price-quote system that uses the Telekuss N.A. Ticker III for price information on all North American and London equities, option futures, and bonds. It supports *Windows/286* 2.*x*, uses DDE, and supports *Microsoft Excel.*

PackRat

Polaris Software
512K
$395.00

PackRat is a personal-information-management program that integrates a phone book, phone notes, a calendar, an agenda, a tasks-to-do list, an expense log, index cards for text notes, and graphic images. It runs under the *Microsoft Windows* environment version 2.03 or higher and uses DDE and TIFF.

Prompt! 1.2

Access Softek
60K
$129.00

Prompt! 1.2 is a hard-disk file manager. It runs under the *Windows/286, Windows/386,* and *Microsoft Windows* version 2.*x* environments, supports *Microsoft Excel,* and uses DDE. It also includes *Microsoft Excel* macros to support the DDE link.

PubTech File Organizer

Publishing Technologies
640K
$199.95

PubTech File Organizer allows you to create, edit, manage, and print files and directories. You can recover deleted files, locate files or text, assign applications to keys, or remap the keyboard to emulate other software. It runs under the *Windows/286* and *Windows/386* environments, uses EMS 4.0, and supports *Microsoft Excel.*

TA_SRV

Townsend Analytics
640K
$350.00

TA_SRV provides realtime and historical quotes on stocks, futures, options, and indices to DDE-aware applications such as *Excel, RealTick III,* and *Option Risk Management.*

TWINDOWS

Mosaic Marketing
$349.00

TWINDOWS is a *1-2-3*–compatible spreadsheet that has file compatibility with other applications, recalc options, 132-column preview mode, colored cells, automatic column-width adjustments, user-defined functions, graphing options, and printer support. It takes advantage of DDE to link to other programs.

Xerox FormBase

Xerox
640K
$495.00

Xerox FormBase combines a forms program with a database. As you create a form, it automatically creates an underlying database to match.

COMMUNICATIONS/ CONNECTIVITY

Crosstalk for Windows

Crosstalk Communications
$195.00

Crosstalk for Windows is a full-featured, full-powered communications package. It provides terminal emulation and file transfer for popular information services, mainframes, minicomputers, and other computers. A programming language is provided for complete automation of routine tasks, such as logging on to a system. Programmable function-key icons may be displayed onscreen and clicked with a mouse. Mouse support also extends to working with menus displayed by host systems. The product supports DDE and *Microsoft Excel.*

DynaComm Asynchronous Edition Version 2.1

Future Soft Engineering
$295.00

DynaComm Asynchronous Edition version 2.1, a powerful communications program for the *Microsoft Windows* environment, features a point-and-click communications manager called Director. The program runs under *Windows* version 2.1 on IBM AT, PS/2, or compatible computers.

Dynacomm Synchronous Edition

Future Soft Engineering
$295.00

Dynacomm Synchronous Edition is a full-featured package that supports IBM 3270 Synchronous communications.

Faxit for Windows

Alien Computing
$179.00

The complete package includes a device driver that interfaces *Microsoft Windows* applications to PC-based fax boards via the *MS Windows* printer device interface. It also has a device driver that allows queued and received faxes to be viewed, printed, or convert-ed to TIFF or PCX for pasting into *Aldus PageMaker* or other *MS Windows* applications supporting bitmaps. It supports the *Windows/286* and *Windows/386* environments and uses TIFF and MDI.

FileSaver

Verity Software House
640K
$35.00 (shareware)

FileSaver is a *Microsoft Windows* utility designed to allow any *MS Windows* application to print quickly, to print multiple files to disk, and to archive printer-ready graphics. This product supports the *Windows/286* and *Windows/386* environments, uses DDE, and supports *Microsoft Excel* via DDE.

Li'l Kate

Tethys Software
192K
$89.00

Li'l Kate is a basic communications and file-transfer utility that features background file transfer, script operation, modem dialing, and context-sensitive help.

MailPlus

Computer Mail Services
100K
$195.00

MailPlus is an electronic mail package that automates access to public electronic mail carriers and the MCI MAIL network via modems and local area networks. *MailPlus* will run under the *Windows/286* and *Windows/386* version 2.*x* environments and uses DDE and EMS 4.0.

TERM for MS-Windows

Century Software
$195.00

TERM provides 13 EXACT terminal emulations and nine file-transfer protocols including XMODEM and Kermit.

ENTERTAINMENT APPLICATIONS

Balance of Power II: The 1990 Edition

Mindscape
640K
$49.95

Balance of Power II: The 1990 Edition uses a statistical database and artificial intelligence to put you in command of one of the world's superpowers. It takes place from 1989 through 1997. The game supports versions 2.*x* and higher of the *MS Windows* environment.

Black Box

August Development
$25.00

Black Box is a strategy game of hide-and-seek set in a maze. It runs under *Windows/286* and *Windows/386* 2.*x* and higher.

EM Arranger

Electronic Music
$695.00

EM Arranger generates music accompaniments and uses MIDI to communicate with keyboards and sound modules from various manufacturers. It supports the *Windows/286* and *Windows/386* environments and uses EMS.

hDC Rocks

hDC Computer
$49.95

hDC Rocks, a realtime action game set in a bombarded asteroid field, challenges coordination skills and reflexes. Score points by shooting down rocks and enemy ships. You lose points for hitting friendly ships. *hDC Rocks* is a Microapp desktop utility for *hDC Windows*.

Master Tracks Pro for PCs

Passport Designs
$395.00

Master Tracks Pro for PCs is a sequencing program featuring 64 tracks of realtime and step recording, a song editor, and graphic editing. Other professional features include controller chasing, fit time, 32 MIDI channels, and a built-in Sysex Librarian.

Windows Backgammon Deluxe

E. F. Dickey
20K
$29.95

Windows Backgammon Deluxe, an interactive program for one or two players, includes backgammon, acey-deucy, and Dutch backgammon. It supports *Windows* version 3.*x*.

PUBLISHING/ GRAPHICS APPLICATIONS

Adobe Illustrator

Adobe Systems
640K (1MB or 2MB expanded memory recommended)
$495.00

Adobe Illustrator is a desktop publishing program that provides freehand drawing, automatic tracing of scanned images, a pen tool for drawing lines and bezier curves, and rotation and scaling of artwork and typefaces. It's for use with *Windows* environment version 2.*x*. The program uses TIFF and EMS, exports EPS files for page layout, and accepts *Adobe Illustrator/Macintosh* files.

Adobe Streamline for Windows

Adobe Systems
640K
$395.00

Adobe Streamline converts bitmaps into PostScript. You can convert an image and then refine it using *Adobe Illustrator* or other drawing programs.

Arts & Letters Graphics Composer

Computer Support
612K
$395.00

Arts & Letters Graphics Composer comes with over 3000 pieces of art and 15 outlines of typefaces that you can size, stretch, twist, bend, flip, and rotate. It supports the *Windows/286* and *Windows/386* environments and EPS, TIFF, WMF, and CGM files.

CA-Cricket Graph

Computer Associates
1MB
$195.00

CA-Cricket Graph is a business and scientific graphing package. It supports the *Windows/286* and *Windows/386* environments and reads *Microsoft Excel* file format.

CA-Cricket Presents

Computer Associates
1MB
$495.00

CA-Cricket Presents is a graphics package for creating business presentations. It supports the *Windows/286* and *Windows/386* environments and TIFF. It also reads *Microsoft Excel* file format.

ClickArt Business Cartoons

T/Maker
$69.95

ClickArt Business Cartoon is a portfolio of business-oriented cartoon images. Categories include finance, employment, money, monsters, and taxes. It runs under the *Windows/286* and *Windows/386* environments.

ClickArt Business Images

T/Maker
$69.95

ClickArt Business Images is a portfolio of over 1000 business-oriented images. It runs under the *Windows/286* and *Windows/386* environments.

ClickArt Christian Images

T/Maker
$69.95

ClickArt Christian Images is a portfolio of religious images. It runs under the *Windows/286* and *Windows/386* environments.

ClickArt EPS Business Art

T/Maker
$129.95

ClickArt EPS Business Art is a portfolio of high-quality, business-oriented graphics. It runs under the *Windows/286* and *Windows/386* environments.

ClickArt EPS Illustrations

T/Maker
$129.95

ClickArt EPS Illustrations is a portfolio of high-quality PostScript images created with *Adobe Illustrator.* It runs under the *Windows/286* and *Windows/386* environments.

ClickArt Holiday Images

T/Maker
$69.95

ClickArt Holiday Images is a portfolio of seasonal images. It runs under the *Windows/286* and *Windows/386* environments.

ClickArt Personal Graphics

T/Maker
$69.95

ClickArt Personal Graphics is a collection of contemporary and popular images. It runs under the *Windows/286* and *Windows/386* environments.

ClickArt Publications

T/Maker
$69.95

ClickArt Publications is a portfolio of professional graphics. It runs under the *Windows/286* and *Windows/386* environments.

Clip3D Library
Enabling Technologies
$99.00 each volume

Clip3D Library is an eight-volume collection of three-dimensional clip art for publishing and presentations. All clip art can be exported to popular programs via EPS, TIFF, PICT, and Paint files. It runs under the *Microsoft Windows* version 1.*x*, *Windows/286*, and *Windows/386* environments.

DeskTop Art
Dynamic Graphics
512K
$74.95 each

DeskTop Art is a collection of software database volumes that contain more than 200 images each. These databases are in the *Aldus PageMaker* and *Ventura* PCX format and are compatible with the Z-Soft *PC Paintbrush* family of programs. DeskTop Art/EPS provides images in *Adobe Illustrator* format. The products support the *Windows/286* and *Windows/386* environments.

DoDOT!
Halcyon Software
640K
$129.00

DoDOT! is a screen-capture and image-conversion utility that supports over 15 file formats as well as *Microsoft Windows'* clipboard. The package supports the *Windows/286* and *Windows/386* environments and uses TIFF.

EnerGraphics
Enertronics Research
512K
$395.00

EnerGraphics is a business presentation graphics package that interfaces to desktop publishing packages and to over 60 printers, plotters, and cameras. It supports the *Windows/286* and *Windows/386* environments, uses TIFF, and reads the *Microsoft Excel* file format.

Fontware Installation Kit
Bitstream
512K
$25.00

Fontware Installation Kit works with *Fontware Typeface Packages* to create screen and printer fonts for *Microsoft Windows* applications. The program supports the *Windows/286* and *Windows/386* environments and can be used with *Microsoft Excel. Fontware Starter Kit*, for use with *Microsoft Excel*, includes *Installation Kit* and several sample typeface packages.

Glyphix Font Software
SWFTE International
1MB
$99.95

Glyphix Font Software is a system that permits you to select fonts in a variety of sizes, weights, and effects from within *Microsoft Windows* applications. Fonts are created on demand and downloaded to the printer by the intelligent Glyphix PCL driver. Glyphix fonts are available for most popular typefaces and include both the ASCII and ANSI character sets. This product supports the *Windows/286* and *Windows/386* environments and is designed for the HP LaserJet printer family.

The Graphics Link Plus+
HSC Software
384K
$149.00

The Graphics Link Plus+ is graphics and imaging software that performs graphic file conversions (such as color to gray scale) and graphic image control, including dithering for special effects. The software supports the *Microsoft Windows* version 1.*x*, *Windows/286*, and *Windows/386* environments, supports TIFF and EMS, and reads the *Microsoft Excel* file format.

hDC Card Designer
hDC Computer
$195.00

hDC Card Designer is a personal greeting-card maker for *Windows*. It works with *hDC Windows Manager* and includes two hDC Microapp utilities: Art Gallery and Card Maker.

JetForm
Indigo Software
640K
$495.00

JetForm is a desktop electronic-forms package that automates the preparation of forms and includes drawing tools and the ability to import logos and signatures. The package supports the *Windows/286* and *Windows/386* environments and uses TIFF.

PC Paintbrush IV
Z-Soft
$99.95

PC Paintbrush IV is a freehand drawing package for *Windows*. Features include adjustable brush widths; instant lines; geometric shapes and curves; cut, copy, and paste; and tilt, flip, shrink, and enlarge. You can add color and patterns, type headings, and zoom in or out. It supports many scanning-manipulation and image-editing tools.

Scrapbook + 2.0
Eikon Systems
$149.95

Scrapbook + is an image, text, and data manager for storing and organizing information visually and textually. It allows retrieval from and pasting into any *Windows* application.

Tempra
Mathematica
640K
$325.00

Tempra is a paint program that supports 256 colors and special effects, such as airbrushing, antialiasing, tinting, blending, washing, shading, and color cycling. It is compatible with desktop publishing and presentation systems, supports the *Windows/286* environment, and uses TIFF and EMS.

Tifanny Plus
Anderson Consulting & Software
512K
$89.00

Tifanny Plus records any part, or all, of a *Microsoft Windows* display using TIFF, PCX, MSP, or BMP. The program, which uses only 28K while in operation, requires *Windows* version 2.*x* or higher and supports the *Windows/286* and *Windows/386* environments.

UltraScript PC
Imagen
640K (1 MB recommended)
$195.00

UltraScript PC is a set of printer drivers and fonts, as well as a language interpreter that converts non-PostScript, dot-matrix, inkjet, and laser printers into PostScript-compatible printers. The software supports the *Microsoft Windows* version 1.*x* and *Windows/286* environments, uses TIFF, and prints *Microsoft Excel* printer output. *UltraScript PC Plus* with 47 additional typefaces sells for $495.00.

WinMaster
Promontory Systems
640K
$195.00

WinMaster is a driver manager and a template software program that allows the use of template overlays with different *Windows* applications. The master template controls the *Windows* system commands and gives you write and paint options at your fingertips. Two die-cut areas allow you to use different application templates, such as *Aldus PageMaker* 3.0 and Micrografx *Designer*. The product supports the *Windows* 1.*x*, *Windows/286*, and *Windows/386* environments.

Works of Art Laser Art/Business Selection
Springboard Software
$99.95

Works of Art Laser Art/Business Selection offers over 125 pieces of encapsulated PostScript (EPS) art. It supports the *Microsoft Windows* environment version 2.*x*.

Works of Art Samplers
Springboard Software
$39.95

Works of Art Samplers provides three volumes of bit-mapped clip art in *PC Paintbrush* format. It supports the *Microsoft Windows* environment version 2.*x*.

Write-On PageMaker
Communication Intelligence
2MB
$189.00

Write-On PageMaker is for use with CIC's Handwriter board and a digitizer tablet to replace or augment the keyboard and mouse. The tablet overlay contains grid boxes for entering text, a graphics area for cursor control, and function boxes for executing *PageMaker* functions. It also includes customizable macro commands which can be written anywhere on the tablet. *Write-On PageMaker* supports the *Windows/286* environment.

Xerox Draw
Xerox
$495.00

Xerox Draw is an illustration and drawing package that includes tools such as polylines, straight lines, boxes and rectangles, polygons, a text editor, and free-form drawing. It can also drag, resize, flip, rotate, or shadow objects.

Zing
Enabling Technologies
$199.95

Zing is a three-dimensional solids modeling program for presentation graphics. It runs under the *Microsoft Windows* version 1.*x*, *Windows/286*, and *Windows/386* environments. It also uses TIFF and PostScript and is compatible with *Ventura* and *Aldus PageMaker* applications. ▷

UTILITIES

Above Disc
Above Software
512K
$119.00

Above Disc is an expanded-memory manager for 286- and 386-based machines. It supports the *Windows/286* environment, EMS, and *Microsoft Excel*.

Essential Windows Utilities
Micro Magic
$49.00

Essential Windows Utilities includes a program launcher, a search program, a password-protection utility, a file- and directory-management program, and a number converter.

ExcelMore
Aristocad
$99.00

ExcelMore is a desktop screen driver package for VGA and EGA chip sets. It can create a desktop much larger than the monitor's physical screen size.

Hammer and Vise
R Company
512K
$50.00

Hammer and Vise, a set of utility programs, performs file compression and creates stand-alone help files for *Microsoft Windows* applications. It runs under the *Windows* version 2.*x* environment.

hDC Windows Color
hDC Computer
640K
$49.95

hDC Windows Color is an enhanced display driver that doubles the number of colors available in *Windows* running on EGA and VGA graphics systems. You can select the 16 colors you want from a palette of 64 pure colors.

HP NewWave
Hewlett-Packard
256K
$195.00

HP NewWave is a personal computer software environment that works together with *Windows/286* and MS-DOS. It manipulates, links, and combines text, numerical data, and graphics from multiple applications.

Microsoft Pageview
Microsoft
$49.95

Pageview is a page-preview utility for documents created with *Microsoft Word* versions 4.0 and 5.0. It allows you to see what you're printing before you print it. You can change margins and page breaks within the program.

PubTech BatchWorks
Publishing Technologies
$79.95

BatchWorks combines a learn mode with a full-featured programming language to add customized control to *Windows*. Macros can be created to save keystrokes.

PubTech MultiTack
Publishing Technologies
$149.95

PubTech MultiTack adds pages to the *Windows* clipboard and provides clip-art and text library support.

Simple Win
Matesys
$99.00

Simple Win allows you to design an icon-based front-end for *Windows*. It contains four programs to create, manage, and maintain the graphical environment.

SmartWin
Romberg & Romberg
20K
$79.00

SmartWin manages files and directories within *Windows'* copy, delete, rename, and modify attributes. It provides file sorting, viewing, and marking in file lists and a full directory tree. It supports the *Windows/286* and *Windows/386* environments.

Superbase 2 Windows
Precision Software
640K
$295.00

Superbase 2 Windows is a file-management, selection, and reporting program that includes text editing, mail merging, label printing, and relational reporting. It supports the *Windows/286* environment and *Microsoft Excel*. The program also runs under the *Windows/386* environment but does not take advantage of all its features.

Super PC-Kwik Disk Accelerator
Multisoft
$79.95

Super PC-Kwik Disk Accelerator is a utility that improves disk I/O performance using advanced disk-caching techniques. It replaces the SMARTDRV.SYS disk-cache program that comes with *Windows*.

Windows COMMANDER
Candlelight Software
6K
$75.00

Windows COMMANDER is a set of utility programs including an application organizer, a directory-changing program, file-location program, and a text- or data-string search program.

WINDOWS CONTACTS

For more information about the Microsoft Windows *products listed in this buyer's guide, contact the companies at the addresses given below.*

Above Software
3 Hutton Centre
Suite 950
Santa Ana, CA 92705

Access Softek
3204 Adeline St.
Berkeley, CA 94703

Active Software
1208 Apollo Way
Suite 507
Sunnyvale, CA 94086

Adobe Systems
1585 Charleston Rd.
Mountain View, CA 94039-7900

Alien Computing
37919 50th St. E
Palmdale, CA 93550

Anderson Consulting
3511 Camino del Rio S
Suite 408
San Diego, CA 92108

Anderson Consulting & Software
P.O. Box 40C-7-3 Cascade Dr.
North Bonneville, WA 98639-0040

Aristocad
1650 Centre Point Dr.
Milpitas, CA 95035

A-T Financial Information
1979 N. Mill St., #106
Naperville, IL 60540

August Development
P.O. Box 667
Maple Valley, WA 98038

Beckman Associates
2418 Towncrest Dr.
Iowa City, IA 52240

Bitstream
215 First St.
Cambridge, MA 02142

Candlelight Software
P.O. Box 95314
Las Vegas, NV 89193-5314

Century Software
5284 S. 320 W
Suite C-294
Salt Lake City, UT 84107

Columbia Software
P.O. Box 8001
Northridge, CA 91326

Communication Intelligence
PS357-333 Ravenswood Ave.
Menlo Park, CA 94025

Computer Associates
10505 Sorrento Valley Rd.
San Diego, CA 92121-1698

Computer Mail Services
24300 Southfield Rd.
Suite 388
Southfield, MI 48075

Computer Support
15926 Midway Rd.
Dallas, TX 75244

Crosstalk Communications
1000 Holcomb Woods Pkwy.
Roswell, GA 30076

Distinct
14082 Loma Rio Dr.
Saratoga, CA 95070

Dynamic Graphics
6000 N. Forest Park Dr.
Peoria, IL 61614

E. F. Dickey
306 E. Maple St.
Fairbury, IL 61739

Eikon Systems
989 E. Hillsdale Blvd.
Suite 260
Foster City, CA 94404

Electronic Music
15922 Strathern St.
Suite 3
Van Nuys, CA 91406

Enabling Technologies
600 S. Dearborn
Suite 1304
Chicago, IL 60605

Enertronics Research
1910 Pine St.
#5 Station Plaza
St. Louis, MO 63103

FormMaker Software
111 Schillinger Rd. S
Mobile, AL 36608

Future Soft Engineering
1001 S. Dairy Ashford
Suite 203
Houston, TX 77077

Halcyon Software
10297 Cold Harbor Ave.
Cupertino, CA 95014

hDC Computer
6742 185th Ave. NE
Redmond, WA 98052

Hewlett-Packard
Personal S/W Division
3410 Central Expwy.
Santa Clara, CA 95051

HSC Software
1661 Lincoln Blvd.
Suite 101
Santa Monica, CA 90404

IBM
472 Wheelers Farms Rd.
Milford, CT 06460

Imagen
A QMS Company
2650 San Tomas Expwy.
Santa Clara, CA 95051

Indigo Software
560 Rochester St.
Suite 400
Ottawa, Ont.
Canada K1S 5K2

Matesys
2001 L St., #801
Washington, DC 20036

Mathematica
402 S. Kentucky Ave.
Suite 210
Lakeland, FL 33802

Micro Magic
261 Hamilton Ave.
Suite 320
Palo Alto, CA 94301

Microsoft
One Microsoft Way
Redmond, WA 98052-6399

Mindscape
3444 Dundee Rd.
Northbrook, IL 60062

Mosaic Marketing
1972 Massachusetts Ave.
Cambridge, MA 02140

Multisoft
15100 SW Koll Pkwy.
Suite L
Beaverton, OR 97006

NBI
3450 Mitchell Ln.
Boulder, CO 80301

Okna
285 Van Buren St.
Lyndhurst, NJ 07071

Passport Designs
625 Miramontes St.
Half Moon Bay, CA 94019

Polaris Software
613 W. Valley Pkwy.
Suite 323
Escondido, CA 92025

Precision Software
8404 Sterling St.
Suite A
Irving, TX 75063

Promontory Systems
1325 S. 800 E
Orem, UT 84058

Publishing Technologies
7719 Wood Hollow Dr.
Suite 260
Austin, TX 78731

R Company
2170 Georgina Ave.
Santa Monica, CA 90402

Romberg & Romberg
6938 Briar Cove
Dallas, TX 75240

Samna
5600 Glenridge Dr.
Atlanta, GA 30342

SoftView
1721 Pacific Ave.
Suite 100
Oxnard, CA 93033

Springboard Software
A Division of Spinnaker Software
One Kendall Sq.
Cambridge, MA 02139

SWFTE International
128 D Senatorial Dr.
Wilmington, DE 19807

Tethys Software
6651 E. Indian River Rd.
Suite 138
Virginia Beach, VA 23464-3441

TimeStar Systems
1803 Mission St.
Santa Cruz, CA 95060

T/Maker
1390 Villa St.
Mountain View, CA 94041

Townsend Analytics
100 S. Wacker Dr.
Suite 1506
Chicago, IL 60606

Verity Software House
P.O. Box 247
Topsham, ME 04086

Xerox
9745 Business Park Dr.
San Diego, CA 92131

Zen Software
72 Bart Rd.
Monroe, CT 06468

Z-Soft
450 Franklin Rd.
Marietta, GA 30067

GEM

Memory requirements, when available, have been provided. At press time, we were unable to verify memory requirements for some products.

BUSINESS AND PRODUCTIVITY APPLICATIONS

GEM 1st Word Plus 2.0

Digital Research
512K
$99.00

GEM 1st Word Plus is a full-featured word processor with the capability to integrate graphics created from other *GEM* applications. Features include the ability to open four windows simultaneously in order to move, copy, cut, and paste text between documents. The product is packaged with *GEM Paint*, a program that produces illustrations, and *GEM 1st Mail*, a mail-merge program.

EDUCATIONAL APPLICATIONS

Computer MAD LIBS

First Byte
512K
$19.95

Computer MAD LIBS adds a new twist to the old party standby. Eight MAD LIB stories use speech technology that lets you hear your finished stories spoken. The program also features cartoon graphics.

First Letters and Words

First Byte
512K
$39.95

First Letters and Words teaches your children letter and word recognition. Ted E. Bear helps children use both upper- and lowercase letters and read whole words. Dinosaur Surprise, Card Circus, and Magic Letter Machine encourage chil-

A HARD DRIVE IS A TERRIBLE THING TO WASTE.

For only **$9.95**, you can spend an hour downloading onto your hard disk from a library of over **10,000 programs.** Additional downloads are as little as **$4.80 per hour.** There are no surcharges for high speed access, no premiums for using *Tymnet* or *Telenet*, and no mandatory monthly minimums.

For more information, with your computer and modem dial 1-800-365-4636. Press Return twice. At *Username:* type JOINDELPHI and at *Password:* type SOFTWARE.

DELPHI™
Populating Hard Drives Since 1982
800-544-4005 • 617-491-3393

Circle Reader Service Number 117

dren to become independent readers.

First Shapes

First Byte
512K
$39.95

First Shapes introduces young children to geometric shapes with the helpful spoken messages and encouragement of Ted E. Bear, a computer friend. Children learn to make toys using geometric shapes and decide to save, print, or delete the toy. Children learn to identify and match shapes.

KIDTALK

First Byte
512K
$39.95

KIDTALK lets you type in any word, number, or sentence and hear it spoken back to you in either a male or a female voice. You can customize the voice by picking tone, pitch, speed, and volume. *KIDTALK* helps students proofread and create their own Pronunciation Dictionary and Secret Codes.

MathTalk

First Byte
512K
$39.95

MathTalk helps students with addition, subtraction, multiplication, and division. The program features a Talking Calculator and two math games, Mystery Number and Table Talk. *MathTalk* from First Byte helps students with math problems until they can solve each one correctly.

MathTalk FRACTIONS

First Byte
512K
$39.95

MathTalk FRACTIONS helps students master fractions, decimals, and percents. The program lets you enter your own problems to help you check homework, or you can try your hand at Fraction Shuffle, Team Challenge, or Fun House. The games stress the interrelationships among fractions, decimals, and percents.

SmoothTalker

First Byte
512K
$39.95

SmoothTalker gives your computer speech capabilities without additional attachments and hardware. You can use the program as a proofreader, talking word processor, and storyteller. You can also create noncommercial programs that talk.

Speller Bee

First Byte
512K
$39.95

Using *Speller Bee,* you create your own spelling list, with *Speller Bee* assisting you until you have correctly spelled the word; then the program gives you practice. The program features different levels of difficulty, grade-level spelling lists, and three games that challenge you to recognize scrambled and hidden words.

ENTERTAINMENT APPLICATIONS

SampleVision

Turtle Beach Softworks
640K
$349.00

Sample Vision is a digital sample editor that operates entirely in graphics mode. Features include a digital signal-processing library and a 250-note MIDI step sequencer.

PUBLISHING/ GRAPHICS APPLICATIONS

ClickArt Business Cartoons

T/Maker
$69.95

Business Cartoon is a portfolio of business-oriented cartoon images. Categories include finance, employment, money, monsters, and taxes.

ClickArt Business Images

T/Maker
$69.95

Business Images is a portfolio of over 1000 business-oriented images.

ClickArt Christian Images

T/Maker
$69.95

Christian Images is a portfolio of religious images.

ClickArt Holiday Images

T/Maker
$69.95

Holiday Images is a portfolio of seasonal images.

ClickArt Personal Graphics

T/Maker
$69.95

Personal Graphics is a collection of contemporary and popular images.

ClickArt Publications

T/Maker
$69.95

Publications is a portfolio of professional graphics.

COLORART Image Library

Presentation Graphics Group
$120.00 each

COLORART is two volumes of full-color image art compatible with many desktop publishing programs. Images can be output in color or black-and-white. Files are available in bitmap and vector formats.

EGART Volume I

Presentation Graphics Group
$69.00

EGART is a full-color bitmap library of more than 65 images and scenes. It's compatible with most desktop publishing and presentation programs.

GEM Draw Plus 2.0

Digital Research
512K
$299.00

GEM Draw Plus is an element-based, graphics drawing program that allows you to create charts, diagrams, and illustrations. Features include a complete set of graphics elements, hierarchical grouping and ungrouping, and the ability to flip items horizontally or vertically.

GEM Presentation Team 2.0

Digital Research
512K
$495.00

GEM Presentation Team is an integrated graphics program for professional presentations. You can create charts, diagrams, illustrations, flow charts, logos, organizational charts, floorplans, and schematics. A large library of business clip art is included. The program can be used with *GEM*-based desktop publishing programs.

GEM Desktop Publisher 2.0

Digital Research
640K
$299.00

GEM Desktop Publisher is a page-composition application that allows you to create professional-looking publications such as newsletters, brochures, reports, and manuals. You can kern and drop in type, wrap type around pictures and charts, and rule boxes and bars. Features include WYSIWYG display, a selection of style sheets, and a line-art toolbox. Text can be entered directly or imported from a word processor.

Publish-It!

Timeworks
512K
$199.95

Publish-It! is a full-featured desktop publishing program with fully integrated word processing, page layout, graphics, and typesetting. Its *GEM* user interface includes icons, pull-down menus, scroll bars, and dialog boxes that make it simple to learn and to use the program.

Publish-It Lite!

Timeworks
512K
$59.95

Publish-It Lite! is a desktop publishing program designed for the less experienced user. It includes page layout, word processing, typesetting, and graphics. The *GEM/3* user interface features pull-down menus and icons.

Touch-Up

Migraph
640K
$199.00

Touch-Up from Migraph is an image design tool that lets you create and edit high-resolution monochrome bitmapped graphics. You can use it to enhance both scanned and painted images. The program features compatibility with several desktop publishing packages including Digital Research's *GEM Desktop Publisher*. Also, *Touch-Up* offers a variety of editing tools for creating professional-quality images.

UTILITIES

GEM Scan 1.1

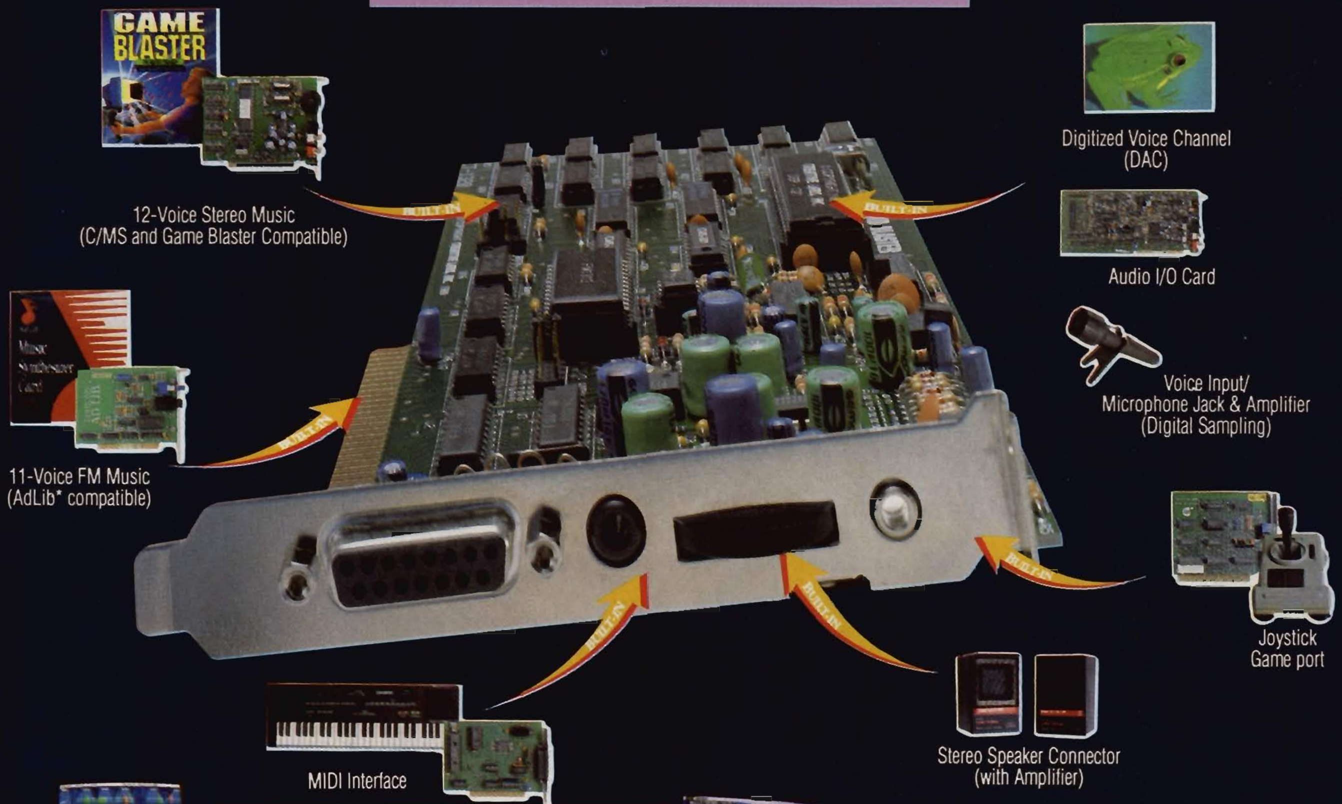
Digital Research
512K
$149.00

GEM Scan is a utility program that permits your desktop scanner to convert line art and photographs into a form that can be inserted into a document. You can take the scanned image, manipulate it, and then print it or save it in GEM.IMG or TIFF. ▷

CREATIVE LABS, INC.

SOUND BLASTER

ALL-IN-ONE SOUND CARD FOR YOUR PC


GAME BLASTER
12-Voice Stereo Music (C/MS and Game Blaster Compatible)
Music Synthesizer Card
11-Voice FM Music (AdLib* compatible)
BUILT-IN
Digitized Voice Channel (DAC)
Audio I/O Card
Voice Input/ Microphone Jack & Amplifier (Digital Sampling)
Joystick Game port
Stereo Speaker Connector (with Amplifier)
MIDI Interface

Some of the major Software Companies developing for **SOUND BLASTER**

- Accolade
- Broderbund
- Capcom
- Cosmi
- Creative Labs Inc
- Data East USA
- Dr. T's
- Electronic Arts
- Epyx
- First Byte
- Gamestar
- Kyodai
- Lucasfilm
- Magnetic Music
- Mastertronic
- Michtron
- MicroIllusion
- Microprose
- Omnitrend
- Optronics
- Origin
- Sierra On-Line
- Software Toolworks
- Spectrum Holobyte
- Taito
- Twelve Tone Systems
- Voyetra

Hurry !
Rush for one

SOUND BLASTER plugs into any internal slot in your IBM* PC, XT, AT, 386, PS/2 (25/30), Tandy (except 1000 EX/HX) & compatibles.

This package includes:

- SOUND BLASTER CARD
- C/MS Intelligent Organ Software
- Talking Parrot Software
- VoxKit Software
- 5.25" and 3.5" disks enclosed

System Requirements

- 512 KB RAM minimum
- DOS 2.0 or higher
- CGA, MGA, EGA or VGA compatible graphic board

Brown-Wagh Publishing

1-800-451-0900

1-408-395-3838 in CA

16795 Lark Avenue, Suite 210 Los Gatos, CA 95030

AdLib* Compatible

* IBM is a registered trademark of International Business Machines Inc. * Tandy is a registered trademark of Tandy Corporation. * AdLib is a registered trademark of AdLib Inc.

Circle Reader Service Number 108

See us at Booth 7130
COMDEX/Spring '90
June 3–6, 1990
Atlanta, Georgia

Prospero Pascal
Prospero Software
$149.00

Prospero Pascal is a Pascal language compiler designed for the *GEM* environment.

Superbase Personal 2
Precision Software
640K
$195.00

Superbase Personal 2 is a file-management, -selection, and -reporting program that includes text editing, mail merging, label printing, and relational reporting.

GEM CONTACTS

For more information about the GEM *products listed in this buyer's guide, contact the following companies.*

Digital Research
Box DRI70
70 Garden Ct.
Monterey, CA 93942

First Byte
3333 E. Spring St.
Suite 302
Long Beach, CA 95054

Migraph
200 S. 333rd
Suite 220
Federal Way, WA 98003

Precision Software
8404 Sterling St.
Suite A
Irving, TX 75063

Presentation Graphics Group
270 N. Canon Dr.
Suite 103
Beverly Hills, CA 90210

Prospero Software
100 Commercial St.
Suite 306
Portland, ME 04101

Timeworks
444 Lake Cook Rd.
Deerfield, IL 60015-4919

T/Maker
1390 Villa St.
Mountain View, CA 94041

Turtle Beach Softworks
P.O. Box 5074
York, PA 17405

PRESENTATION MANAGER

Active Life Version 1.1
TimeStar Systems
512K
$149.00

Active Life is a time-management program for planning, managing, and tracking business and personal time. The software provides flexible schedules, pop-up calendars, alarms, and week-at-a-glance schedules, among other features.

Microsoft Excel for OS/2
Microsoft
2.5MB
$495.00

Microsoft Excel for OS/2 is a spreadsheet program designed for Presentation Manager. It features flexible consolidation of worksheets and point-and-click linking. It also supports long filenames and includes new printer drivers for OS/2.

SideKick Version 2.0 for Presentation Manager
Borland International
3MB
$199.95

SideKick for Presentation Manager is based on the Paradox Engine and generates Paradox tables that can be shared in a multitasking environment. The program includes Time Planner, Notepad, Calculator, and Phonebook applications.

PM CONTACTS

For more information about the Presentation Manager products listed in this buyer's guide, contact the following companies.

Borland International
1800 Green Hills Rd.
P.O. Box 660001
Scotts Valley, CA 95066-0001

Microsoft
16011 NE 36th Way
Box 97017
Redmond, WA 98073-9717

TimeStar Systems
1803 Mission St.
Santa Cruz, CA 95060

THE NEW TESTAMENT GAME
or
THE OLD TESTAMENT GAME

GUARANTEED NONDENOMINATIONAL

3 Game Levels Are:
Educational for Kids
Fun For Youth
Challenging For Adults

Enjoy nearly 300 important passages in each game!

For fastest service, send check or money order for **$29.95 each** plus $3.00 shipping/handling to:
The Family Jewels
5631 Kent Place
Santa Barbara, CA 93117

IBM 3 1/2" disks available for an additional $2.00 per game.

Latter–day Saints: Please request a copy of our brochure detailing our special LDS product line.

Now Available For:
100% IBM Compatible - MS-DOS 2.1 or higher
Color monitor preferred, monochrome also supported
Commodore 64/128 - Includes both C-64 and *TRUE* C-128 versions!

NOT TRIVIA – NO PRIOR KNOWLEDGE NEEDED

For more information, or to order C.O.D. call:
(805) 683-4568
California residents, please add 6 3/4% sales tax

Circle Reader Service Number 118

RESOURCES

GET UNSTUCK FROM GUI JAMS

Online Help

If you have a modem and you're a member of GEnie, you can join the Tandy RoundTable (to go there, type M635 or TANDY). The Tandy RoundTable has a bulletin board, realtime conferences, software libraries, and RoundTable news. The software libraries include *DeskMate* utilities, programs that run under *DeskMate*, Tandy press releases, and Tandy user group newsletters.

GEnie also has a Microsoft RoundTable (type M505 or MICROSOFT), where you can find help with both *Windows* and OS/2. Besides the usual bulletin board, realtime conferences, software libraries, and RoundTable news, you'll also find the Microsoft Knowledge Base. It has over 20,000 items of information based on Microsoft's customer product questions. The software libraries include many public domain and shareware *Windows* and OS/2 applications, utilities, printer and screen drivers, and helpful tips.

GEnie
GE Information Services
401 Washington St.
Rockville, MD 20850
(800) 638-9639

Microsoft also has a support area on CompuServe, called The Microsoft Connection (type GO MICROSOFT). This area includes the Microsoft Excel Forum, the Microsoft Applications Forum (with a section for *Windows* applications), the Microsoft Systems Forum (with software libraries for programming *Windows*, Presentation Manager, and OS/2), Windows 3rd Party Application Forum (where developers, support their *Windows* products), and Microsoft's Knowledge Base.

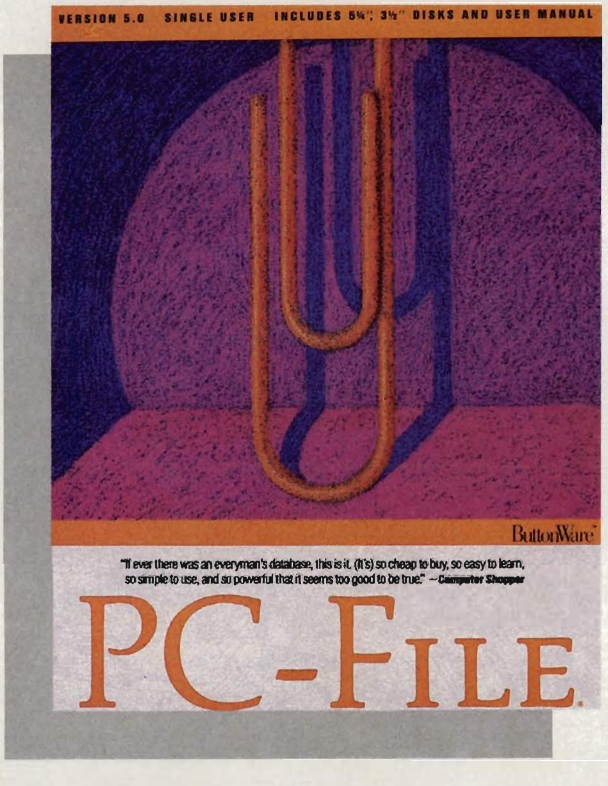
CompuServe Information Service
P.O. Box 20212
Columbus, OH 43220
(800) 848-8199

BOOKS

While GUIs (Graphical User Interfaces) are designed to be easy to use, they're still difficult to program and manage properly. These books offer a behind-the-scenes look at these new application environments.

- *The Best Book of Microsoft Windows 3*, by Carl Townsend; Howard W. Sams, 11711 N. College Ave., Suite 141, Carmel, IN 46032; (800) 257-5755; $24.95
- *The First Book of DeskMate*, by Jack Nimersheim; Howard W. Sams, 11711 N. College Ave., Suite 141, Carmel, IN 46032; (800) 257-5755; $14.95
- *Getting the Most Out of DeskMate 3*, by Michael A. Banks; Brady Books, 15 Columbus Cir., New York, NY 10023; (800) 624-0023; $21.95
- *Mastering Microsoft Windows*, by Michael J. Young; SYBEX, 2021 Challenger Dr., #100, Alameda, CA 94501; (800) 227-2346; $24.95
- *Microsoft OS/2 Programmer's Reference*, by Microsoft; Microsoft Press, 16011 NE 36th Way, Redmond, WA 98073-9717; (800) 883-3303; Vol. 1 and Vol. 2—$29.95 each; Vol. 3 and Vol. 4—$19.95 each
- *The NeXT Bible: Hardware and Software Systems for The NeXT Computer*, by Doug Clapp; Brady Books, 15 Columbus Cir., New York, NY 10023; (800) 624-0023; $29.95
- *The NeXT Book*, by Bruce Webster; Addison-Wesley Publishing, 1 Jacob Way, Reading, MA 01867; (800) 447-2226; $22.95
- *OS/2 Presentation Manager Made Easy*, by Herbert Schildt; Osborne McGraw-Hill, 2600 Tenth St., Berkeley, CA 94710; (800) 227-0900; $22.95
- *Power Windows*, by Jim Heid; Microsoft Press, 16011 NE 36th Way, Redmond, WA 98073-9717; (800) 883-3303; $19.95
- *Programming Windows*, by Charles Petzold; Microsoft Press, 16011 NE 36th Way, Redmond, WA 98073-9717; (800) 883-3303; $24.95
- *Quick & Easy Guide to OS/2*, by Ted Crooks; COMPUTE! Books, One Chilton Way, Radnor, PA 19089; (800) 345-1214; $14.95
- *Running Windows*, by Nancy Andrews and Craig Stinson; Microsoft Press, 16011 NE 36th Way, Redmond, WA 98073-9717; (800) 883-3303; $19.95
- *User's Guide to OS/2*, by Glen Allport and Ted Crooks; COMPUTE! Books, One Chilton Way, Radnor, PA 19089; (800) 345-1214; $29.95
- *Using Microsoft Windows, 2nd Edition*, by Ron Person and Karen Rose; Que, P.O. Box 90, Carmel, IN 46032; (800) 428-5331; $21.95
- *Using Windows 3*, by Tom Shelton; Osborne McGraw-Hill, 2600 Tenth St., Berkeley, CA 94710; (800) 227-0900; $22.95
- *Windows Programming: An Introduction*, by William H. Murray III and Chris H. Pappas; Osborne McGraw-Hill, 2600 Tenth St., Berkeley, CA 94710; (800) 227-0900; $28.95
- *The Windows Shopper's Guide*, edited by Michael S. Jones and John W. Schmitt; White Fox Communications, P.O. Box 7125, Beaverton, OR 97007-7125; (503) 629-5612; Vol. 1, No. 1—$17.95

PRODUC


VERSION 5.0 SINGLE USER INCLUDES 5¼", 3½" DISKS AND USER MANUAL
ButtonWare
"If ever there was an everyman's database, this is it. (It's) so cheap to buy, so easy to learn, so simple to use, and so powerful that it seems too good to be true." —Computer Shopper
PC-FILE

Mark Wagoner

THIS INEXPENSIVE SHAREWARE DATABASE CAN HANDLE YOUR FILES LIKE THE PROS

COMPUTE! CHOICE

MARVIN BRYAN

How would you like a low-priced flat-file database that's *dBase*-file compatible but much easier to use thanks to a comprehensive set of menus? What if this database had a graphing module that would let you visually inspect how your data adds up? How would you like to try it out free of charge, paying only if it fits your needs? If this sounds appealing, just dial up your local BBS or an online service, download *PC-File* 5.0, and you can be using the program less than an hour from now.

PC-File may be shareware, but it's a serious, professional-quality program. Used by major corporations, the program reads and writes files in *dBase* format, can handle up to a billion records, does relational lookups, and includes graphics and communications modules. Even with all these features, the price to register is only $129.95.

Although *PC-File* uses the same file structure as *dBase III Plus, PC-File* has no *dBase*-like command mode. It's entirely menu-driven, except for some report-formatting options, so you don't have to be a programmer to use it. The more recent *dBase* products have a menu structure, but it's not as comprehensive as the one you'll find in *PC-File*. If something isn't obvious from a menu, the short tutorials in the 400-page manual included with registered copies and the online help screens should keep you from getting stuck.

The program comes with an automated installation utility that requires little more from you than telling it the name of the source and destination drive paths. The utility automatically uncompresses the files and puts them in the right places.

You can use *PC-File* on a floppy system, provided you have at least two 720K drives. Running it from a hard drive is more convenient and lets you create bigger databases. You'll need at least one megabyte of free storage space on your drive. The program supports Epson-, IBM-, and Okidata-compatible dot-matrix printers and, new to version 5.0, HP LaserJets and compatibles. You can print graphs, but not text, on a PostScript printer.

PC-File will automatically recog-

TIVITY

PC-FILE
ButtonWare
VERSION 5.0
PC-File 5.0
HELICOPTER SERVICES

Mark Wagoner

nize a Microsoft, PC-Mouse, or Logitech mouse driver, allowing you to make point-and-click menu selections.

Each time you start *PC-File,* you're asked for the drive and path of the database you want to work with. The first time you use the program, your answers are recorded and become defaults. You can press Enter to bypass these prompts the next time you run the program.

You're then greeted with a list of currently defined databases. If you want to create a new database, simply type its name. There are two modes you can use to define your database, Fast and Paint. If you pick Fast, you provide field names and lengths and accept the default screen layout; this gets your new database going in a hurry.

If you want to use multiple input screens (you can have up to five) or a custom layout, you must select the Paint option. At this point, you can design your own screens, enclose areas in boxes, add onscreen reminders, and arrange the elements in any sequence you like. To create a field name, you type a name of 12 characters or less, without spaces (*dBase* users often use an underline to substitute for the space character), and place a pair of square brackets immediately to the right of the field name. Those brackets are the tipoff to *PC-File* that the characters to the left are a field name and not a comment or a heading.

Between the brackets, you hit the space bar once for each character you want to allow in the field, establishing the field length. If you'd like to have a default answer for a field, you simply type in the default response between the brackets. If most of your customers are in Louisiana, for instance, you can set that as the default entry for your State field.

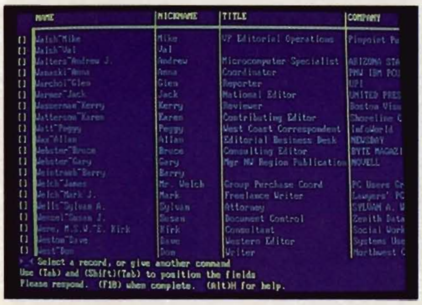
Once you've defined your data-entry screens with the Fast or Paint method, you're asked to assign a data type to each field. You can specify some fields as *window fields,* which let you use the cursor keys to scroll right or left to see additional text that's not displayed in the field.

At this point, you can change the sequence in which the cursor moves from field to field. You can also identify fields you want to be indexed, name the resulting index files, and establish whether the indexes are ascending or descending.

That's all there is to setting up your database. However, when you're choosing data types, you may find the field types more limited than in some other database programs. You can define character, numeric, date, logical (yes/no or true/false), and memo fields. The maximum field length is 254 characters, except for memo fields, which can contain 5000 characters; you can have up to 127 memo fields in a database. The maximum record length (excluding memos) is 4000 characters. You can have calculated fields, including date calculations such as the number of days since an employee was hired. So what's missing here?

You can't set up unique fields, except for record numbers. In other words, there is no protection against duplicate entries in a field. If you were running an employee database, someone entering data could accidentally type in the same Social Security number for two different individuals; the program wouldn't catch the error.

Some programs offer sophisticated checking capabilities in this regard. For example, some databases allow you to establish unique combinations of fields. Let's say you collect mystery novels. You have a database that lists the books by author and title and marks which titles you've already purchased. You want to make sure you don't buy duplicates. You don't want to establish Author by itself as a unique field, because the same author has probably written several books. Also, you don't want to establish Title as a unique field, because different authors sometimes write books with the same title. This is no problem with



```
    NAME                  |NICKNAME  |TITLE                       |COMPANY
[]  Walsh~Mike            |Mike      |VP Editorial Operations     |Pinpoint Pu
[]  Walsh~Val             |Val       |                            |
[]  Walters~Andrew J.     |Andrew    |Microcomputer Specialist    |ARIZONA STA
[]  Wanaski~Anna          |Anna      |Coordinator                 |PMW IBM PC
[]  Warchol~Glen          |Glen      |Reporter                    |UPI
[]  Warner~Jack           |Jack      |National Editor             |UNITED PRES
[]  Wasserman~Kerry       |Kerry     |Reviewer                    |Boston Visu
[]  Watterson~Karen       |Karen     |Contributing Editor         |Shoreline C
[]  Watt~Peggy            |Peggy     |West Coast Correspondent    |InfoWorld
[]  Wax~Allan             |Allan     |Editorial Business Desk     |NEWSDAY
[]  Webster~Bruce         |Bruce     |Consulting Editor           |BYTE MAGAZI
[]  Webster~Gary          |Gary      |Mgr NW Region Publication   |NOVELL
[]  Weintraub~Barry       |Barry     |                            |
[]  Welch~James           |Mr. Welch |Group Purchase Coord        |PC Users Gr
[]  Welch~Mark J.         |Mark      |Freelance Writer            |Lawyers' PC
[]  Wells~Sylvan A.       |Sylvan    |Attorney                    |SYLVAN A. W
[]  Wenzel~Susan J.       |Susan     |Document Control            |Zenith Data
[]  Were, M.S.W.~E. Kirk  |Kirk      |Consultant                  |Social Work
[]  Weston~Dave           |Dave      |Western Editor              |Systems Use
[]  West~Don              |Don       |Writer                      |Northwest C
>_< Select a record, or give another command
Use (Tab) and (Shift)(Tab) to position the fields
Please respond.  (F10) when complete.  (Alt)H for help.
```

You can browse through your entire database file, search for specific records, and even do relational lookups.

database programs that you can set up to reject a new record only when the Title and Author fields are both the same as those in an existing record.

Unfortunately, you can't do this in *PC-File*. What you can do, however, is run a separate utility after the fact that will find or delete existing duplicate records. It's an awkward process. The program can only compare adjacent records; record 2 can be compared to records 1 and 3, but not to records 4 and 5. Therefore, first you must sort the database on the fields in which you're interested, then use the Duplicate Records option from the Utilities menu to find or delete them.

Another field attribute that's missing is the required field. It's very helpful to be able to set up a database so that the operator (even if it's you) can't enter a new record without filling in a certain field. Going back to that employee database, a required field could be the Social Security number or the date hired. In the mystery-novel database, the required field might be a logical field that indicates whether you have already bought the book or are still looking for it.

PC-File does have some flexible field options, however. You can change the name of a field at any time, without losing data. Of course, if you do this, you must remember to modify all references to the old name, too, including in reports and graphs.

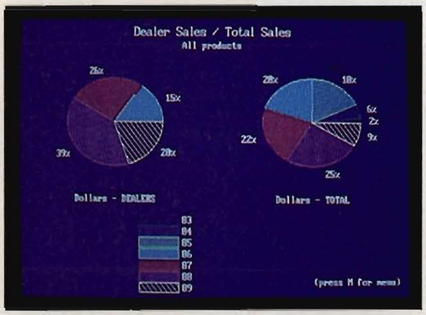
You can set up data-input masks, specifying exactly what characters will be allowed in a field. Masks can also be data to be automatically entered into a field. For instance, you can have the current date entered from your system's clock.

You can do relational lookups with *PC-File,* an unusual capability for a flat-file database. Depending upon the data entered into one field, the program can look up information from another database and enter appropriate data into another field. Using the mystery-book database example, entering the author's name might trigger the automatic entry of pseudonyms under which he or she writes. Entering a part number in a sales database might cause the name of the part to be added.

Reports are crucial to the usefulness of any database program. If you can't get the information out in a practical form, there's not much use in entering it. *PC-File* does well in this area. There are several format options. You can generate reports with one record per page; in rows, so that record is shown on a single line, with each field occupying a column; in a free-form format of your own design; or in a simple one-up mailing-label format. For complicated reports, you can use the program's editor to enter a sequence of formatting commands, including calculations and conditional statements. Beginners might have trouble creating a report program, but for *dBase* programmers it's a piece of cake.

PC-File stores its files in *dBase III Plus* format, so you may not be able to use some *dBase IV* files. You can also share data with *Lotus 1-2-3, WordPerfect, WordStar,* and *Microsoft Word.* In addition, the program can import and export ASCII, DIF, and SYLK files.

You can find records quickly using many commands and wildcards. *PC-File* also supports Soundex searches, letting you look for entries that sound like a particular character sequence, regardless of the actual spelling.



***PC-File* 5.0's chart module lets you view your data from a graphic perspective.**

Deleting records could cause trouble for those accustomed to using other database products. With programs like *dBase,* when you delete a record, it's not really gone. It has merely been removed from view and from inclusion in calculations. You can restore it to the database any time you like, unless you've issued a command to pack the database. *PC-File* works the same way, except that, once you've deleted records and added new ones, one of those deleted records will be overwritten automatically and permanently by each new record written.

If you want to call a phone number listed in any *PC-File* record, all you have to do is display the record and press Alt-J or Ctrl-J. The program will find the number and dial it. If the record contains more than one phone number, you'll see a small menu asking which one you want to call. You can time the length of the conversation, a particularly handy feature if you're concerned about long-distance costs or if you bill clients for your time.

The graphics module is outstanding, more than you'd expect in a low-cost database program. You can select which records and fields you want to include and calculate totals or averages. You can display the data in line graphs, horizontal or vertical bar charts, pie charts, overlapped bar charts, cumulative bar and line charts, and scatterplots. You can look at graphs on the screen or print them horizontally or vertically on your printer, complete with headings and legends. The quality is excellent, particularly if you're using a laser printer. You must have a graphics card in your computer to use the graphing feature.

PC-File includes a number of other helpful extras. You can pop up a small horizontal calculator window to make quick calculations using database formulas. You can define, record, and edit up to 22 different macro key combinations. Finally, the program even includes a mail-merge module.

Unfortunately, technical support isn't free. It will cost you a dollar a minute, using a 900 number.

PC-File is powerful, able to hold its own in the competitive commercial database market. Unlike many shareware programs, you can purchase a registered copy of *PC-File* in a professional-looking package from computer dealers. Several retailers, including mail-order houses, carry the single-user version at a substantial discount from the $129.95 price. Also, many businesses use a network version that lists for $349.95 and isn't shareware.

While it doesn't have all of the bells and whistles of the $500 database programs, *PC-File* is an excellent value for many database users. And best of all, you can try before you buy to make sure it's the program for you.

PC-File 5.0

IBM PC and compatibles with 512K of RAM and hard disk or two 720K floppies—$129.95

Package includes manual, one 3½-inch and two 5¼-inch disks, and 25-percent-discount coupon for other ButtonWare products.

BUTTONWARE
P.O. Box 96058
Bellevue, WA 98009-4469
(800) 528-8866 (orders only)
(206) 454-0479

PRODUCTIVITY IMPACT

HIT THE ROAD

WITH DESKTOP VIDEO

DAVID D. THORNBURG

As a professional speaker who crisscrosses the country doing workshops for groups ranging from 20 to 2000 people, I've seen firsthand how technology has impacted professional presentations. Back in 1979, before the phrase *desktop presentation* was coined, I was lugging my Atari 800 to conferences to display my "slides," a sequence of computer-generated text screens and images that provided visual support for my talks. Though this medium was much harder to accommodate than traditional overheads and slides, I felt it was the wave of the future.

I remember once when I created some new slides in my hotel room the night before my talk, in which I referred to some ideas that had been mentioned by another speaker earlier that day. The audience had never seen that kind of turnaround for a visual presentation before.

Of course, finding a color video projector in 1979 was tricky, and the quality of the image left a lot to be desired, but I never doubted that the computer would someday grow to be a presentation tool.

Today I fly around the country with my Apple IIc Plus and an Epson LC-500 color projector. This compact setup fits in the overhead rack of the plane and allows me to store my visuals on 3½-inch disks. Each workshop or speech has its own disk. Using a hypermedia program that I wrote myself, I'm able to step through a presentation or to jump around on the disk as I choose. I create my images on a Macintosh and then port them to the Apple II, providing me with the best of both worlds. All I need is a projection screen and power outlets and I'm in business!

While the quality of a presentation isn't based purely on the technology used, I find the computer to be a far better presentation tool than traditional overheads or slides. For example, I can animate my presentations, plot graphs with data taken from the audience, and restructure my talk on the spot.

Sophisticated visual effects on television have increased audience expectations for a presentation. To go from the visual power of a television commercial to the overhead whiplash of a droning presentation supported by hand-drawn transparencies is cruel and unusual punishment. Technology-supported presentations are clearly the wave of the future. We need to step beyond the multimedia hype and look at what it takes for you to use the computer as a presentation tool.

What you need is a computer on which you can create pleasing text and graphics and a video display suitable for your audience's size. If you're working with a small group, 10 people or so, a large-screen monitor should suffice. For groups of up to 30, a rear-projection monitor from 45 to 60 inches (such as the big-screen Matsushita TV) works well. If your presentations take place on the road, you might consider a liquid-crystal-display plate (most are monochrome, with some limited color ability available on fancier models). These plates sit on top of a standard overhead projector like a transparency. The computer image is displayed on the transparent plate and projected on the screen. For a really big show, you'll need a monster projector that's typically provided by the hotel in which you're entertaining a few thousand of your favorite people.

Of course you'll need software, but that's pretty easy to get. Just about every computer has slide-show programs available that allow you to arrange a series of graphic images into a presentation. If you want to jump around in your presentation as well as bring in material from other video sources, you'll probably want a hypermedia tool such as *Tutor Tech* for the Apple II, *HyperStudio* for the Apple IIGS, *HyperCard* for the Mac, *CanDo* for the Amiga, or *LinkWay* for the IBM PC. Of course, if you want to blend laser videodisc images with your own graphics, you'll also need a video overlay card (called a *genlock*). While this feature is available on the Amiga for less than $200, it's available for other computers at a higher price.

My ideal workstation would let me refine and create slides on the plane and then give a presentation upon landing. With the rise in the popularity of low-cost laptops, this dream is quickly turning into a reality.

But suppose you don't want to horse around with the computer at all. What then?

The latest piece of technology on my wish list is the still video camera. You can think of these gadgets as cameras that record on disk instead of on film. With one of these tools (such as the Canon Zapshot), you can store your slides on a floppy disk and then use the camera to play them back during your presentation.

My guess is that this technology will be integrated with computer graphics soon, allowing you to create presentations that incorporate both photographs and computer-generated images.

Almost everyone has to give presentations at some point in his or her life. The next time you're preparing a talk, think about letting the computer display the visuals for you. You'll be surprised at how easy it has become. ◘

DESIGNER/ARCHITECT
anted for leading design/build
Ability to create conceptual
d floor
ts, renderings
ble to
ing
Possibilities!
HELP WANTED
STAND OUT
PROFESSIONALS

PUBLIC RELATIONS SPECIALIST

This is an entry-level position for a person with some public relations experience (1-2 years) or education specializing in public relations with some work experience. It is an excellent opportunity to learn and grow with the company. You will handle activities such as: maintaining media database; maintaining the on-time schedule for and follow-up of materials due editors and outside vendors; and handling inside coordination for participation in editorial activities and other activities as required. This person will also act as a backup for the public rela-

LOOKING FOR WORK? YOUR COMPUTER CAN HELP YOU FIND THE JOB THAT'S RIGHT FOR YOU.

MICKEY McLEAN

GET A JOB!

Desktop computers have become an integral part of the working world. In fact, it's difficult to enter the work force without encountering a PC. As a computer user, you probably list your computer experience on your résumé, but you can also use your computer to help organize and direct your job search. With the right software, you can determine your job interests, research companies, create a database of prospective employers, prepare a résumé and cover letters, and even negotiate an offer. From job counseling to networking, your PC can give you the edge you need to get the job of your dreams.

Unless you're sure about the type of career you'd like to pursue, you should start your search with counseling. If you're a recent graduate looking for that elusive first position, you can probably find counseling at your school. If you're an experienced worker reassessing your career goals, professional counselors can help. Career counselors can test your abilities and interests and match them with an appropriate career choice.

Thanks to the New England Center for Career Development, Mindscape, and your PC, you can test yourself. *The Perfect Career,* designed by James Gonyea, president of the New England Center for Career Development, is a program that recommends occupations based on your interests and abilities.

Gonyea explains that he developed the software because of the overwhelming demand for career counseling.

"There are more people than ever before that need career counseling," Gonyea says. "And good counselors are hard to find."

Although Gonyea doesn't believe computers will replace humans, he feels that the machines make life easier for professionals as well as clients.

"A lot of tedious tasks that used to be performed by counselors have been taken over by computers," Gonyea says. "Computers can ask a lot of questions and save a lot of time."

Testing 1, 2, 3

The Perfect Career can be used by first-time job-seekers or experienced workers looking to change their careers. The test consists of 180 questions relating to different work activities. You respond by indicating how strong or weak you are in these areas and how interested you would be in carrying out these tasks on a daily basis.

The program charts the results on bar graphs and compares your interests with your abilities. It then recommends occupations from a database of more than 650 job possibilities. Each recommendation is accompanied by code numbers that can lead you to additional information in standard occupational directories, such as the *Occupational Outlook Handbook.*

If you need more detailed information about a particular career, you can order in-depth occupational profiles for a nominal fee from the U.S. Department of Labor.

If, after completing the program, you still don't have a clear idea of which direction to take, you may want to enlist the help of a professional career counselor.

"*The Perfect Career* is a good first step," Gonyea says. "For some people it's all they need. Others may still be confused and need further assistance."

Applying Yourself

Your next step is to determine which companies to contact. You can pore over the classified ads, send out a mass mailing of résumés and cover letters, or list yourself with an employment agency.

But before you do these things, you should first use your computer to uncover vital information about the companies you want to contact. Subscribers to the Delphi online network can access information on 5000 domestic companies listed on the New York Stock Exchange with the Executive Desk Register of Publicly Held Corporations. If you have access to Dialog or Dow Jones News/Retrieval, you can download information about domestic corporations, including annual reports, but this data doesn't come cheap. For example, Dow Jones charges $2.14 per minute during the day and $0.44 per minute during the evening and on weekends.

Information in other specialized databases, especially in technical fields, can be downloaded from various professional association bulletin boards. You can also find information about prospective employers at your public library.

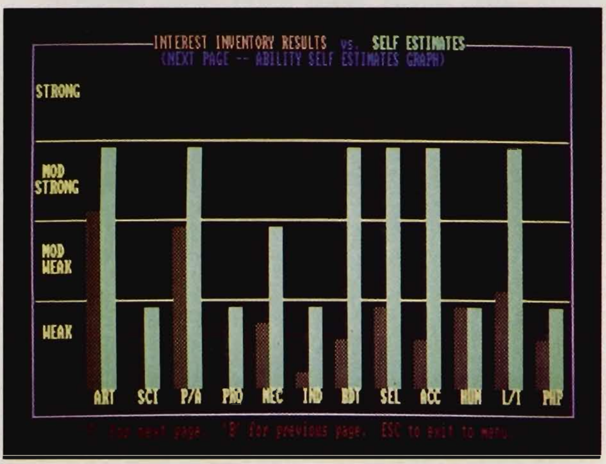
Not only is this information useful to narrow down the number of companies you would like to send résumés to, but it can be a valuable resource when it's time to interview. ▷

Illustration by Janice R. Fary

Letter Perfect

Unless you're using an employment agency, you'll need to write a résumé and cover letters. Several software programs can help you do this. They can also let you track the interview process.

BetterWorking Resume Kit, from Spinnaker Software, helps you organize your skills, experience, and education into a concise format. The program offers nine different résumé formats, each geared to enhance specific aspects of your career history or particular job skills.



INTEREST INVENTORY RESULTS vs. SELF ESTIMATES
(NEXT PAGE -- ABILITY SELF ESTIMATES GRAPH)

[illegible] for next page. 'B' for previous page. ESC to exit to menu

Mindscape's *The Perfect Career* lets you compare what you think your interests are with your actual test results.

Once you've entered and organized the information, a 100,000-word spelling checker helps you avoid embarrassing misspellings. Keep in mind, however, that a spelling checker doesn't excuse you from thoroughly proofreading your résumé. Finally, you can use a variety of fonts and point sizes, boldfacing, underlining, and spacing options to customize your presentation.

With *ResumeMaker,* from Individual Software, you can create résumés tailored to your background. If you've shown a strong progression in your career, you could choose the chronological format. Should you prefer to highlight your expertise, then the functional format would be appropriate. The performance format combines a little of both.

ResumeMaker's online glossary of action words—such as *managed, implemented,* and *developed*—can liven up your list of past job responsibilities.

The Guided Letter System suggests paragraphs written by experts that can be used for your cover and thank-you letters. Combine the appropriate paragraphs to build a convincing letter. To compose your own letters, use the built-in word processor. *ResumeMaker* also monitors the job search with a database of prospective employers, an activities log, an appointment calendar, and tips for job hunting and interviewing. The names and addresses you store in the database can be easily merged with your cover and thank-you letters, saving you valuable time.

Downloading a Job

With the rapid growth of online services, it would seem natural for major networks such as CompuServe, GEnie, QuantumLink, and Prodigy to offer a job-search service. Within such a framework, subscribers could electronically file their résumés with an online résumé bank, and companies with job openings could list their employment needs. The online service could then match job seekers with employers.

No online network offers this kind of service yet, but one may soon be available for QuantumLink subscribers. James Gonyea, president of the New England Center for Career Development and the designer of *The Perfect Career,* is working with Quantum on an online job-listing service.

"This is the next frontier," Gonyea says. "We're working on a service where anyone can record information about themselves, and where employers can look at it and find potential employees."

Kelly Brogan, producer of Educational Services for Quantum, says, "There is a need for a career type of service on the network."

She cautions that the service is still in the development stage and refuses to make any promises about when it might be available or whether it will even see the light of day.

"We're still trying to determine what our subscribers want," she says.

Career Coach

In addition to the specialized packages we've looked at so far, there are two general-purpose packages—*The Career Management Partner* and *Career Navigator*—that attempt to manage more than one aspect of your job search.

The Career Management Partner, from Scientific Systems, contains a word processor that helps you create, edit, print, and store letters, proposals, and résumés. Its database includes 100 leading executive-recruiting firms and can be customized to include as many as 500 companies and contacts. You can use the addresses and phone numbers in the database with the program's automated mailing and telephoning features and search the database by name, company, or contact date. With the mail-merge feature, you can automatically type envelopes and personalized letters.

The program lets you use your modem to access company information in online databases and send résumés to companies that use computerized recruiting. You can also set up your résumé to be faxed to a prospective employer.

The complete package includes booklets on techniques and online prospecting, an introductory Dow Jones News/Retrieval packet, and an instructional video.

Drake Beam Morin, a highly regarded career-counseling and out-placement firm, developed *Career Navigator* because many of the firm's clients wanted their college-age sons and daughters to have the same benefits of DBM counseling that they've had. ▹

MONEYCOUNTS 6.5

Save time and money with our $35 money manager.

NEW! Smart Data Entry™
Cuts input time up to 95%!!!

"If you're looking for a fast return on your software investment, you can't do much better than MoneyCounts."
-- PCResource Magazine

MoneyCounts is the clear choice for both home and business.

You're up and running right away.

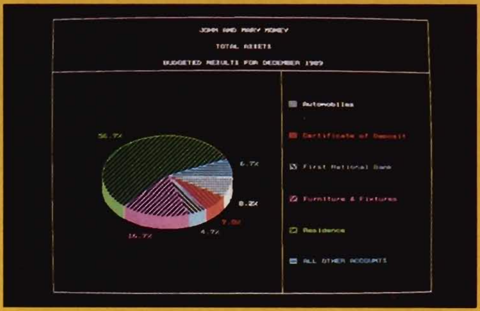
MoneyCounts is easy-to-use. It's CPA-designed and menu-driven with on-line help. No experience required.

In just minutes, you'll do what used to take hours or even days!

Manage your cash, checking, savings and credit cards with ease. Prepare your budget and compare it to your actual results. Balance your checkbook instantly — our smart checkbook balancer makes short work of the toughest bank statement. MoneyCounts even prints any type of pin-feed or laser check.

You SEE where your money goes.

Unlike other financial management software, MoneyCounts uses the full capabilities of your personal computer. You can display and print three-dimensional, high-resolution graphics.



Put a financial genius to work for you — Smart Data Entry™

MoneyCounts learns and remembers your entries, so you can enter transactions with one or two keystrokes. Cuts input time up to 95%.

Make your taxes a breeze.

MoneyCounts estimates your personal income tax, keeps detailed records and links directly with your tax preparation software.

Get ALL the details.

MoneyCounts prints eight types of financial statements, six different inquiry reports, general ledger and accountant's trial balance and loan amortization and accumulation schedules. All reports can be displayed on-screen or exported to your favorite spreadsheet.

MONEYCOUNTS 6.0
Best Buy
Best Buy

Still only $35???

Yep. That's why over 180,000 people save time and money with MoneyCounts. And why *Computer Shopper* readers have voted us two consecutive Best Buy awards.

Good news for Quicken and Dollars & Sense users who are ready for a change.

Why not switch to a full-featured program with state-of-the-art graphics? Our new free import utility lets you step up to MoneyCounts and bring your data with you!

Try MoneyCounts FREE for 30 days!

There's no risk. If you're not 100% satisfied, simply return it within 30 days for a full refund (excluding shipping).

ORDER NOW for same-day shipping!

Credit card and C.O.D. orders call

1-800-779-6000

24 hours a day, 7 days a week
In Canada call 319-395-7300
FAX: 319-395-0217

Or send check or money order payable to Parsons Technology.

MONEYCOUNTS 6.5

ParsonsTechnology, 375 Collins Road NE, Cedar Rapids, IA 52402 USA

☑ **YES! Rush me MoneyCounts 6.5**
$35 + $5 shipping
Not copy protected. Includes printed manual and free technical support!

Name ____________

Address ____________

City ____________ State ____________

Zip ________ Phone (____) ____________

☐ Check or Money Order ☐ MasterCard ☐ Discover

☐ American Express ☐ Visa

Card # ____________ Exp. Date ________

MoneyCounts requires an IBM/Tandy/Compaq or compatible computer, 384K or more RAM and DOS 2.0 or higher, 2 disk drives (or a hard disk). Works with all printers and monitors. Add $5 shipping/handling–$10 outside North America. Iowa residents, please add 4% sales tax. CODE= COM06

Parsons Technology®

375 Collins Road NE
Cedar Rapids, Iowa
52402

Circle Reader Service Number 157

Matchmaker

Not only can individuals use their personal computers at home to help them find jobs, they can go to Snelling and Snelling, a professional placement agency, and take advantage of its new computer network, Silent Search.

Specializing in both temporary and permanent job placement, Snelling and Snelling has developed a computer program that matches job applicants with jobs literally overnight. Applicants enter pertinent information about themselves, while the companies that Snelling and Snelling represents list the qualifications for the positions they're trying to fill.

After the information is fed into a computer at the local office, a match is attempted based on the applicants and companies on file there. If an appropriate match doesn't develop locally, the information is sent via Telenet to the company headquarters in Sarasota, Florida, where regional and national matches are attempted overnight.

By the time the local Snelling and Snelling office opens the next morning, the local operator has a list of potential jobs for each of the applicants and a list of applicants for the company that placed the job order. The office that placed the order then telephones the office that represents the applicant to discuss the match.

Based on a hierarchical system, Silent Search requires each applicant to meet or exceed each requirement in order to achieve a perfect match. If a perfect match doesn't occur after the computer program makes its first pass through the applicants and employers, it will drop or modify certain requirements on each subsequent pass. The number of passes determines the quality of the applicant.

Silent Search is still in its infancy. Snelling and Snelling has signed up only 100 out of 507 possible locations, but it hopes to have the majority connected to the network in the near future. There's no extra charge for the service.

Designed for students or others with limited experience, *Career Navigator* uses case studies, hypothetical situations, and quizzes to help you learn the ins and outs of a job search. Acting as a career coach, the program identifies your interests and accomplishments, defines your communication skills, and helps you set objectives. To help you determine which type of career to pursue, the program generates random sets of job criteria for you to consider, with each set representing a potential job. This exercise forces you to consider new job possibilities.

After pointing you toward a career, *Career Navigator* offers advice on how to write effective letters and résumés. It automatically produces a rough draft of your résumé based on your input. Your résumé can then be fine-tuned and customized for each job application.

Other features include advice on how to conduct research, develop contacts, and act on interviews. You can also build a database for mass mailings. *Career Navigator* helps you manage your job search by helping you develop a weekly plan and assessing your progress. Once you begin to receive job offers, the program evaluates each offer against the criteria you had entered earlier. It also offers advice on how to negotiate and survive the first three months on the job.

Off to Work

Your PC can help you discover your interests and abilities, seek out job opportunities, conduct research, write your résumé and cover letters, keep track of your interviews, and remember your appointments. It can point you in the right direction, but it can't go on the interview for you. It's up to you to take the knowledge you gain and apply it. Use it effectively and you might just get a job that will make your parents proud. ⊡

Mickey McLean is an editorial assistant for COMPUTE! Publications.

JOB CONTACTS

For more information about the products and services mentioned in this feature, contact the following companies.

BetterWorking Resume Kit
Spinnaker Software
One Kendall Sq.
Cambridge, MA 02139
(617) 494-1200

The Career Management Partner
Scientific Systems
5 Science Park
New Haven, CT 06511
(203) 786-5236

Career Navigator
Drake Beam Morin
100 Park Ave.
New York, NY 10017
(800) 345-5627

Delphi
3 Blackstone St.
Cambridge, MA 02139
(800) 544-4005
(617) 491-3393

Dialog
3460 Hillview Ave.
Palo Alto, CA 94304
(415) 858-2700

Dow Jones News/Retrieval
P.O. Box 300
Princeton, NJ 08543-0300
(609) 520-2949

The Perfect Career
Mindscape
3444 Dundee Rd.
Northbrook, IL 60062
(708) 480-7667

QuantumLink
8620 Westwood Center Dr.
Vienna, VA 22180
(800) 392-8200

ResumeMaker
Individual Software
125 Shoreway Rd.
Suite 3000
San Carlos, CA 94070-2704
(415) 595-8855

Snelling and Snelling
Franchise Support Center
4000 S. Tamiami Trail
Sarasota, FL 34231
(813) 922-9616

PRODUCTIVITY

PC PRIMER

HINTS AND TIPS FROM OUR READERS

ONE BIG BATCH FILE

Here's my favorite batch-file trick. MS-DOS stores files on your hard disk in clusters of 1024, 2048, or 4096 bytes, depending on your DOS version and disk size. If your disk uses 2K clusters, even tiny 10-byte batch files will use up 2K of disk space. If you have several short batch files, they'll end up wasting a lot of storage space. My solution is to combine all of the batch files into one big one. Even with branching and syntax help routines, it will still take up less disk space.

First you'll need to create a routine that will determine which batch routine the user wants to execute. Load a text editor and create a file called MAIN.TXT, with these lines:

```
ECHO OFF
IF '%1'==' ' GOTO SYN
SHIFT
GOTO %0
```

Now you'll need to add a couple of lines to each batch file that you're going to merge. Load your first batch file and add a label, prefixed by a colon, to the top of the file. It's probably best to use the original filename as your label. Then add the command GOTO EXIT at the bottom of the file. For instance, for your SPREAD.BAT file, you'd modify it to read

```
:SPREAD
   (old batch-file lines)
GOTO EXIT
```

Repeat this for each batch file you wish to add. You'll also want to create a new file called SYN.TXT that contains a set of echo commands that will remind you of the correct syntax for your new batch file. See the example at the end of this tip.

Once you've edited all of your batch files, you're ready to create MAIN.BAT. Type COPY MAIN.TXT+file1.bat+file2.bat+file3.bat+SYN.TXT MAIN.BAT, where file1.bat and the others are the old batch files you edited. Don't delete your original files until you've tested and debugged MAIN.BAT.

To use your new file, type MAIN *command (parameter)*, where *command* is one of your labels, and *parameter* is an optional batch-file parameter or filename. MAIN with no argument will display the command syntax.

When you install software, just edit MAIN.BAT and insert another routine instead of creating a new batch file. Don't forget to update the SYN routine to display the new options.

Here's a sample batch file that will dial your phone using a modem, load the *Quattro* spreadsheet, or load *QuickBASIC*. It's included only to illustrate a completed batch file, and it will require modification depending on the programs and disk setup you're using.

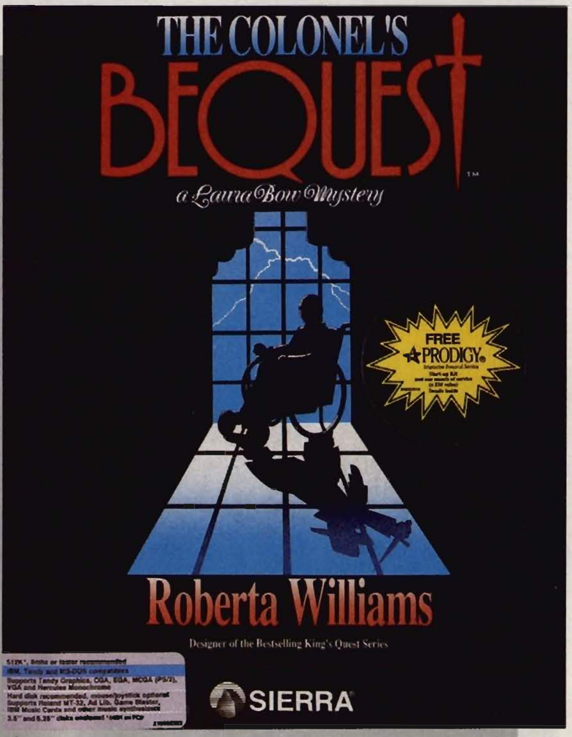
```
ECHO OFF
IF '%1'==' ' GOTO SYN
SHIFT
GOTO %0
REM.......CALL
:CALL
if "%1"==" " goto Pdir
if "%1"=="?" goto Pdir
mode com2:300,n,8,1
echo ATDT %1 > com2:
echo Pick up phone and hit Enter
pause
echo ATH > com2:
goto exit
:Pdir
type c: \phone.dir |more
GOTO EXIT
REM........QUATTRO
:QUAT
d:
cd  \quat
quat %1
GOTO EXIT
REM........QUICKBASIC
:BAS
if '%1'==' ' goto SYN
set lib=e: \LANG \BAS \LIB
cd e: \LANG \BAS
e:
if exist . \prgm \%1.bas goto found
if exist . \prgm \%1 goto found
echo Source not found, CTRL-C to stop
pause
:found
qb . \prgm \%1 %2 %3 %4 /Ladvbas.qlb
set tmp=F:
GOTO EXIT
REM.........SYNTAX
:SYN
ECHO SYNTAX: MAIN CMD (VAR1)
   (VAR2) ...
ECHO CALL (NUMBER)
ECHO QUAT (WORKSHEET)
ECHO BAS sourcefile (SWITCHES)
:EXIT
```

Note that the commands in all caps are new, while the commands in lowercase are from the original batch files.

Ralph B. Parsons
Minneapolis, MN

Do you have advice that makes a PC more productive? If so, we'd like to hear from you. Send your tip, no matter how brief, to COMPUTE! Feedback—PC Primer, P.O. Box 5406, Greensboro, North Carolina 27403. If we publish your suggestion, we'll send you a gift. ⊡

ENTERTA



Mark Wagoner

COMPUTE! CHOICE

RICHARD SHEFFIELD

TIMELY PLOT ELEMENTS AND CHARACTER INTERACTIONS MAKE THIS MYSTERY ADVENTURE LESS PUZZLING

The hushed announcement makes its way through the stately high-ceilinged theater, "The curtain is about to go up, please take your seats." You settle into the soft, velvet-cushioned, teak-trimmed seats, looking forward to a good old-fashioned mystery. From the theater program you gather that this will be a standard 1920s Gothic murder story. It takes place on a small island, deep in the Louisiana bayous, at the isolated estate of the reclusive Colonel Henri Dijon.

In a rather unusual opening, the cast is introduced before the play begins. One by one, the characters take their places upon the stage: Colonel Dijon, the reclusive millionaire; the Colonel's drunken sister, Ethel Prune, and her attractive daughter, Lillian; the snobbish Gertrude Dijon, widow of the Colonel's younger brother; and her roguish son, Rudy, and actress daughter, Gloria Swansong. These are followed by the Colonel's confidants—a lawyer, Clarence Sparrow, and Dr. Wilbur C. Feels—and then by the servants, the solemn butler, Jeeves; the sexy French maid, Fifi; and the old cook, Celie.

Then something very strange happens. As the announcer says, "And starring the young detective, Laura Bow," the spotlight shifts and lands right on you! The stage director waves frantically, so, somewhat dazed and confused, you take your place on the stage. This is like one of those weird dreams where you suddenly find yourself taking a final exam for a class you never signed up for or heading off to work with no clothes on. But before you can panic, someone hands you a couple of pages of the script and shoves you into Scene I.

You make it through the first couple of scenes easily enough. They are pretty straightforward, and you

INMENT

Mark Wagoner

don't have many lines. As a student at Tulane University in New Orleans, you're invited by your wealthy friend Lillian to spend a weekend at her uncle's estate. She describes the estate as a "creepy old place," so even though you have some studying to do, you can't resist. You stick close to Lillian and follow her through several scenes, including a spooky boat ride through the swamp, an encounter with the stiff butler, Jeeves, and a tense dinner scene where the Colonel tells the group that they will divide his wealth equally upon his demise. Bickering immediately breaks out among those gathered, each thinking that he or she is more deserving than the rest. Lillian tires of the squabbling, so the two of you retire to your rooms. As Lillian heads off to freshen up, you read the last page of the script handed to you: (Lillian *flounces out of the room, leaving* Laura *alone.* Laura *wanders around the room for a short time, examining closets, drawers, and various objects, then ventures out into the enormous mansion.)*

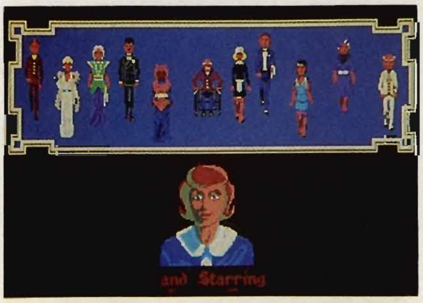
That's all you have, no more script. You're on your own. It's up to you to solve the mystery of *The Colonel's Bequest*.

Though much of this—such as examining objects and solving puzzles—may seem familiar at first, don't be fooled. This is not King's Quest meets Agatha Christie. *The Colonel's Bequest* is quite different in both plot and play from other recent Sierra releases. The other games have been basically puzzle-oriented. You advanced in each game by solving one puzzle after another. You were unable to get past certain points until you solved the problem before you.

The Colonel's Bequest, on the other hand, is decidedly *not* puzzle-oriented. It's driven by interaction between you and the other characters and by the plot. The game is divided into eight acts, like a play, and starts at 7:00 p.m. As you wander the estate, you will stumble upon scenes or hear vital conversations that will cause time to move along in 15-minute chunks. Moving the clock along generally does not require you to solve a puzzle, it just requires you to be in the right place to receive the necessary plot information. It's quite possible that time could bring the game to a conclusion, however unsatisfactory, before you solve many of the puzzles.

If you intend to solve the mystery, you'd better start looking for clues, interviewing the guests, and taking anything that's not nailed down. You can solve the mystery only through solving the puzzles. The game will continue to move on around you, but the more puzzles you solve and the faster you solve them, the more you'll understand what's going on.

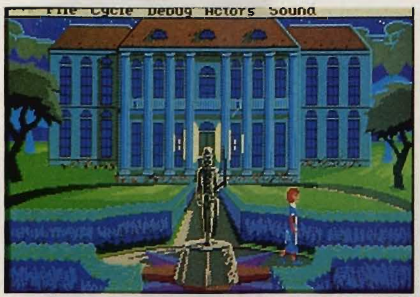
Physical problems, like finding hidden keys and opening secret doors, aren't the only ones you face. Some of the puzzles lie in the characters themselves. Though intentionally stereotyped, each character is well developed and has a rich past. Many carry dark secrets and have sinister character flaws. Discovering these will give you some idea of who has a motive for murder. But you'll have to ask the



You play the part of young Laura Bow, the star member of the cast in Sierra's 1920s Gothic murder mystery adventure.

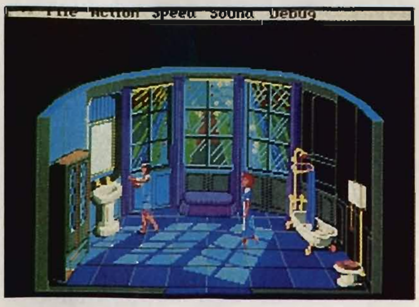
right questions at the right time. Sometimes people are in the mood to talk, and sometimes they aren't. If they are in a talkative humor, pump them for all they have. And it wouldn't hurt to make a friend if you get the chance.

The action takes place all over the estate, indoors and out. This gives you quite a bit of ground to cover, so you need to keep on the move. Sooner or later, you'll stumble into the right scene, and the clock will advance. Once it does, you can be sure that almost all the characters and a few objects, have changed location, so rechecking all locations frequently is a must. But don't worry about missing something in the house while you're outside. Being in the right place at the right time is important, for the most part, only late in the game.



It's up to you to find out what secrets lie in Colonel Dijon's mysterious mansion.

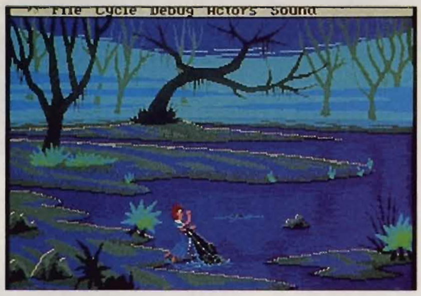
The graphics are extremely well done. I especially liked how even familiar spaces, such as the kitchen or bedrooms, take on a foreboding air once the lights are turned off. Deep shadows and moonlight shining through the large Victorian windows are used with great effect. The areas outside of the house are quite interesting also. As anyone who has ever been out in southern woods late at night can attest, it's not always a quiet and still place. Just as in real life, the estate grounds are populated with everything from ground squirrels and lightning bugs to gators. Best watch your step near the swamp.



Be careful while searching through the mansion—only a psycho would risk taking a shower in this creepy old estate.

Though the gameplay is different, the game interface will be familiar to anyone who has played a Sierra adventure. You control the onscreen figure, Laura, with the keyboard, a mouse, or a joystick. Some instructions are typed in, but most frequently used commands such as *ask about* or *look at* have quick shortcuts to reduce the keyboard work. You can access game-related commands using pull-down menus. These functions include saving your game, listing your inventory, controlling the volume, and setting your character's movement speed.

Sound-board owners will again be treated to a terrific musical score as the game supports the Ad Lib, Roland MT-32, Game Blaster, IBM, and several other sound cards. As in other Sierra games, the music is tailored to fit the scene. It not only provides a nice background while playing, but it also adds to the dark and dangerous mood. Unfortunately, without a sound board, the music can be downright annoying. At least you have the option to turn it off.



Watch your step when you wander around the creepy bayou—there's hungry gators in them thar swamps.

The Colonel's Bequest is copy-protected using a clever method that's in keeping with the spirit of the game but may pose some problems. You must use a red-tinted magnifying glass to read hidden fingerprints on the back of an included map. Some people may have a hard time distinguishing between the two shades of red. One older gamer reported having to get one of the neighbor's children to read the print for her each time she started the game.

Some veteran adventure gamers may take issue with the design of *The Colonel's Bequest*. The back of the box says it's "not to be missed by veteran 3-D adventurers." However, some hard-core adventurers have complained that there are too few puzzles to be solved and the few that are there are too easy. They feel that the game is too passive and voyeuristic.

This is a departure from previous Sierra adventures. There is nothing forcing you to do anything except wander around. How much you get out of the game, and how completely you solve the series of complex mysteries will depend entirely on how much effort you put into it. To be very successful and attain the highest rating at the end of the game, you must ask very good questions, take careful notes, and notice everything. People change clothes, objects change location, and a great deal can slip past you if you're not paying close attention.

In fact, it's quite easy to miss things the first time through. This is one of those rare adventure games that really demands to be played again. When you eventually finish the game, you'll be given a rating from Barely Conscious to Super Sleuth. You can then look at the computer's note lists. Some of these lists of things found or done will be marked *Incomplete,* giving you ideas of new things to try next time around. There's a Hint section for those who need even more help. The game has several possible endings. But even the best of them won't confirm your suspicions if you haven't done your investigative work during the game.

Sierra, under the guidance of Roberta and Ken Williams, is one of the few game publishers willing to take risks and to try something new. *The Colonel's Bequest* is a clever, witty, and interesting variation on a familiar theme. And even without puzzles by the hundreds, the program fills ten 5¼-inch disks. You can easily kill several weekends as you play and replay the game and come to know, and finally understand, the characters. For armchair sleuths interested more in plot than in puzzles, that's one killing they can live with.

The Colonel's Bequest

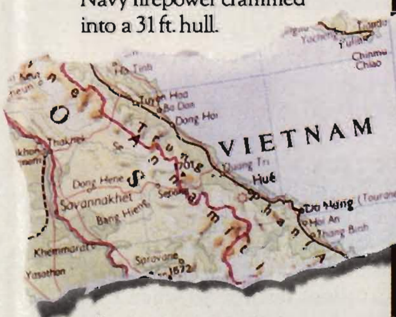
IBM PC and compatibles with 512K (640K for PCjr)—$59.95

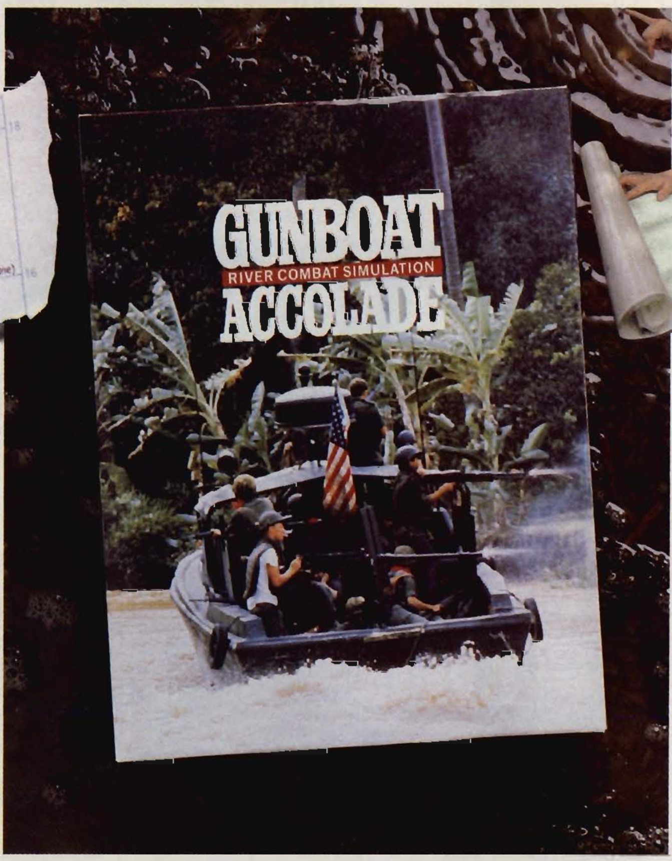
Package includes manual, map, magnifying glass, pencil, notepad, four 3½- and ten 5¼-inch disks, and free Prodigy offer.

SIERRA
P.O. Box 495
Coarsegold, CA 93614
(800) 326-6654

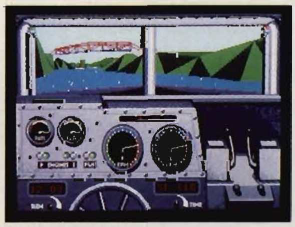
Small Craft Warning.

Prepare for a storm. Of bullets. *Gunboat.*™ Eight tons of U.S. Navy firepower crammed into a 31 ft. hull.

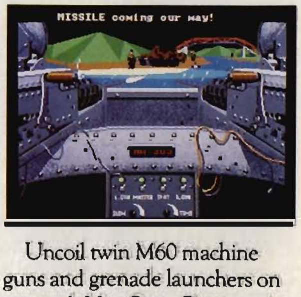




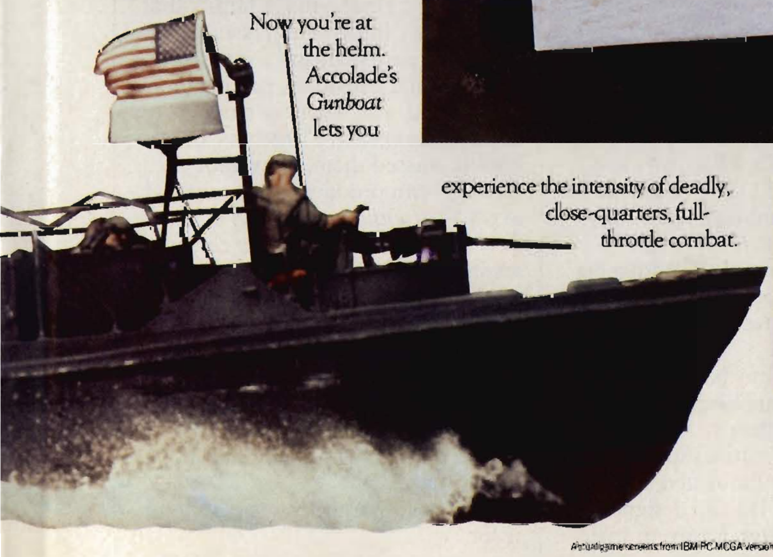
The fastest, most agile arsenal ever to turn 29 knots up a jungle river.



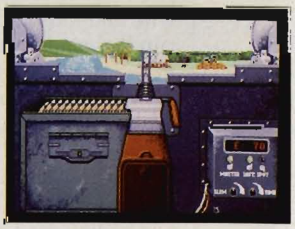
Climb aboard an authentically detailed river patrol boat (PBR) and get a 1st-person perspective from 4 battle stations.



MISSILE coming our way!



Now you're at the helm. Accolade's *Gunboat* lets you experience the intensity of deadly, close-quarters, full-throttle combat.



River combat, where an enemy ambush lurks around any bend, up any canyon or by any bridge.

Uncoil twin M60 machine guns and grenade launchers on renegade Viet Cong, Panamanian rebels and the murderous Colombian drug cartel.

They're all on the river. Waiting.

Polygon-fill animation and bit-map graphics immerse you in the steamy reality of 3 sweltering combat zones. Twenty missions lie ahead, in countries where the mortar fire is as thick as mosquitoes.

Gunboat. The water's about to get rough.

How to order: Visit your favorite retailer or call 800-245-7744.

ACCOLADE™
The best in entertainment software.™

Actual game screens from IBM PC MCGA version of the game. Other versions may vary.

Circle Reader Service Number 162

ENTERTAINMENT

GAMEPLAY

ORSON SCOTT CARD

WALKING THE FINE LINE

BETWEEN PLAY AND WORK

Remember the early days of the home computer, when every computer manufacturer claimed that with its machine, you could do *anything?* Run your home air-conditioning system? Get your children into law school? Organize your closets? Even balance your checkbook?

The reality was far different. Before your computer could do anything, you discovered, you had to enter all the pertinent information. If the computer was going to keep a complete household inventory, that meant typing into a database every single thing in the house. And before the computer could balance the checkbook, you had to type in every check you wrote. It just wasn't worth the extra work.

Nowadays, though, it seems that software companies—and the pundits who write about them—have gone to the opposite extreme. Some have been quite explicit about it, saying that the basic applications for the computer are already known: word processing, spreadsheet, database. Add a few specialty applications like desktop publishing, computer graphics, computer-aided drafting and design (CADD), and communications for stockbrokers and other lonely people with modems, and you pretty much have everything the computer's likely to do.

Oh—and games. But games are *frivolous*. Not like the workhorse programs that give the computer something *important* to do.

I don't see it that way. I think games are the primary reason computers need to exist. All those serious applications are only good insofar as they resemble games.

Don't get me wrong—I couldn't live without *WordPerfect*. I write with it; when it's hooked into SWFTE's *Glyphix* font manager and my LaserJet II, I typeset books with it. But what I really want to do is *play* with it, because *WordPerfect* is a nifty game.

For now, though, let's set those serious uses aside. I don't believe we've really scratched the surface of what computers will do for our lives. I think that sometimes it's the seemingly trivial things we do with computers that can bring us the most pleasure.

For instance, take *Printmaster Plus* (Unison World). It's sort of a general, all-purpose, simple-minded printer program that does banners, cards, signs, and stationery. The graphics are pretty coarse—big blocky squares and jagged lines even on a laser printer.

But it's simple and fast and fun and it works. And, most importantly, you *can't screw it up!* For years my wife and kids and I have been able to run downstairs and turn out a banner—*MOM'S BACK!, WE LOVE EMILY*, the normal stuff. With a big selection of pictures and a fair selection of fonts, the results are personalized, splashy, fun.

Lately, Geoffrey has taken to inventing his own applications for *Printmaster*. On Valentine's Day, he made up all his own valentines to take to school; they were funny and clever and appropriate. He also designed stationery for his sister, Emily, to write to her cousin Miriam—and then sent Miriam special stationery to use to write back to Em. It turned out so well that when an adult friend of ours saw the stationery, she commissioned Geoffrey to design stationery for her and her sister.

Was Geoffrey happy? Do pigs grunt?

Recently we got another program, *Calendar Creator Plus* (Power Up! Software). I bought it mail order; when it arrived, I handed it to Geoffrey—age 11 at the time—and said, "Learn this so you can do the monthly calendar for the church newsletter."

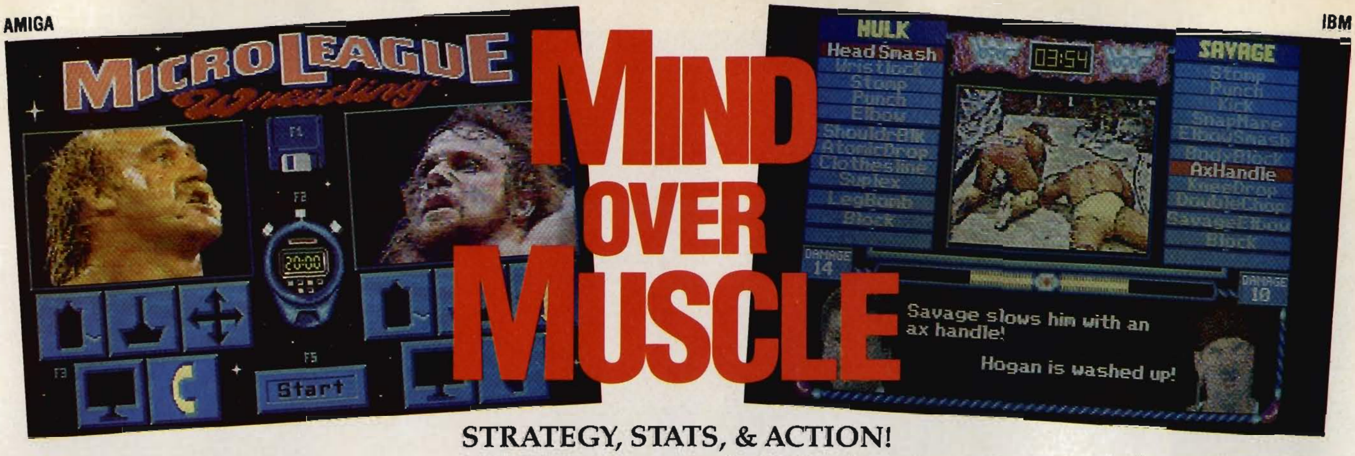
The next day he came upstairs with a set of beautiful laser-printed monthly calendars. Without any help from me (except for installing it on the hard disk afterward), Geoffrey had produced excellent results. So when I tell you that the instructions are so clear that an 11-year-old who doesn't know MS-DOS can get good results, I can prove it!

We also asked him to create family calendars for both sides of the family as a Christmas gift this past year. Each set of cousins and grandparents got a 1990 calendar with all the family birthdays on it—including the birthdays of our shared ancestors four or five generations back.

We're a close enough family that the birthday information is valuable. In fact, in past years my wife used to make similar calendars, pasting them up by hand, and when we stopped sending them each Christmas, our kinfolk missed them. Now, though, Geoffrey can produce a new calendar every year *without* having to enter the data (except when new little cousins are born). And without any more work, those ancestor birthdays help give us a sense of history.

Is *Calendar Creator Plus* a serious program? Well, it isn't making us any money. Nor is *Printmaster Plus*. But we make real use of both programs; we *play* with them; they're part of our lives.

That's what the home computer is for. ◻


AMIGA
IBM
MicroLeague Wrestling
F4
F2
20:00
F3
F5
Start
HULK
Head Smash
Wristlock
Stomp
Punch
Elbow
ShouldrBlk
AtomicDrop
Clothesline
Suplex
LegBomb
Block
DAMAGE 14
03:54
SAVAGE
Stomp
Punch
Kick
SnapMare
ElbowSmash
BodyBlock
AxHandle
KneeDrop
DoubleChop
SavageElbow
Block
DAMAGE 10

Savage slows him with an ax handle!

Hogan is washed up!

MIND OVER MUSCLE

STRATEGY, STATS, & ACTION!

It's mind over muscle in MicroLeague WWF Wrestling, new for 1990—the only strategy simulation endorsed by the World Wrestling Federation.

The outcome is up to you—it's the wrestler's power plus damage factors, statistics, and your strategy that determine the winner. Stomp! Smash! Punch! It's so real it's incredible. Make your moves with our exclusive Digitized Video Action (DVA) from actual WWF matches, featuring your favorite superstars.

Defend Hulk Hogan's title or be "Macho King" Randy Savage or Ted DiBiase and try to capture the belt. Plus, play out all the drama of live WWF matches including interviews and insults from the WWF stars and ringside commentary by Vince McMahon, Jesse "The Body" Ventura, and Bobby "The Brain" Heenan.

Want more? Every other month, look out for a new, exciting, bone-crushing, double event in our WWF Superstars match disk series. Put a wrist lock on MicroLeague WWF Wrestling today and play it for real!

WORLD WRESTLING FEDERATION

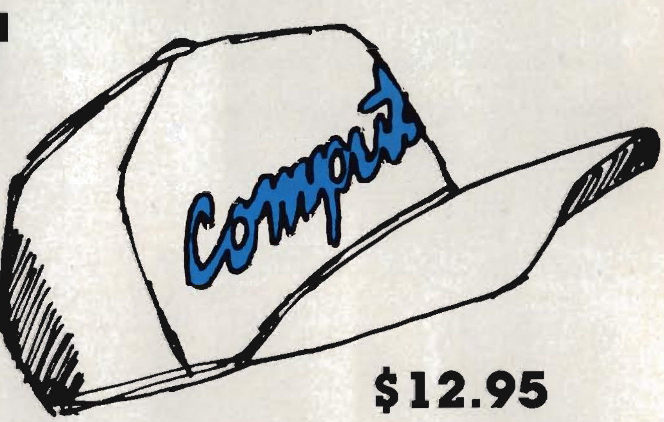
MicroLeague Wrestling

Can't find MicroLeague WWF Wrestling? Call (302) 368-9990. Available for Atari ST and Commodore 64/128. 1990 version available for IBM/Compatibles and Commodore Amiga. MicroLeague Sports Association, 2201 Drummond Plaza, Newark, DE 19711. © 1990, MicroLeague Sports Association.

® Registered Trademark of TitanSports, Inc. © 1990 TitanSports, Inc. HULK HOGAN™, HULKSTER™ and HULK RULES™ are trademarks of the Marvel Comics Group licensed exclusively to TitanSports, Inc. All character likenesses are trademarks of TitanSports, Inc. All rights reserved. Made in U.S.A.

Circle Reader Service Number 111

TOP IT OFF with COMPUTE! Caps



$12.95

- 100% corduroy ballcaps
- Royal blue with white "puff" lettering
- Easy to wash with shape-retaining backing
- Adjustable tab to fit all adult sizes
- Made in America
- $12.95 each (plus $2 shipping and handling)

Send check or money order to:

COMPUTE! Caps
P.O. Box 5188
Greensboro, NC 27403.

Please send me __________ COMPUTE! Caps. I've enclosed $12.95 plus $2 shipping and handling for each cap.

__________ Subtotal

__________ Sales tax (NC, NY, and PA residents add appropriate sales tax)

__________ Shipping & handling ($2 per cap)

__________ Total enclosed

Name ____________________________________

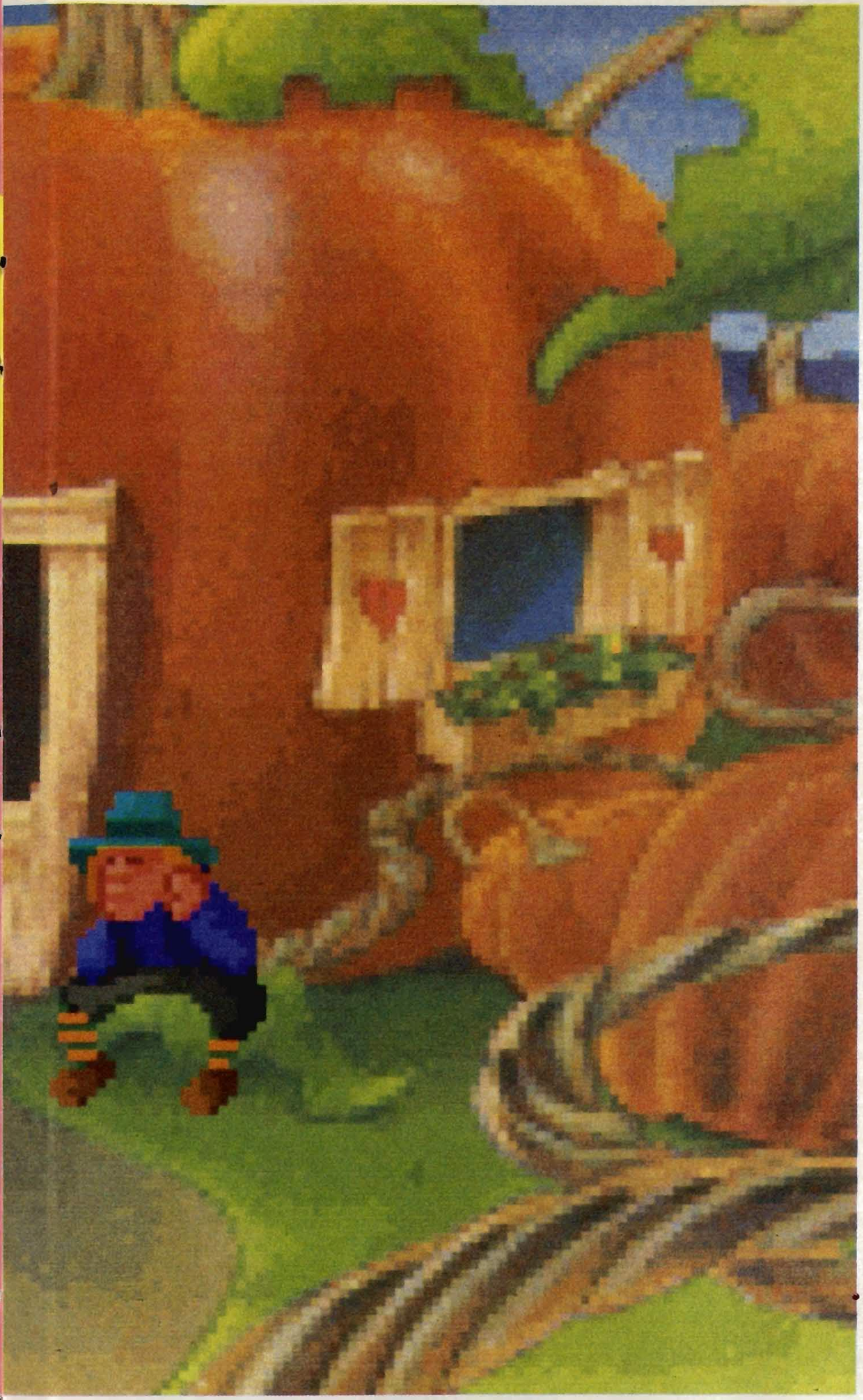
Street Address ______________________________

City _____________________________________

State ____________________ ZIP ______________

All orders must be paid in U.S. funds drawn on a U.S. bank. Please allow 4-6 weeks for delivery. Offer good while supplies last.

CD-ROM: IT'S NO



FAIRY TALE

SIERRA ON-LINE AND MOTHER GOOSE BREAK NEW TECHNOLOGICAL GROUND

KEITH FERRELL

Over the next few years, Sierra On-Line hopes to transform a disk problem into a disc opportunity.

The problem is that the company's animated adventures are growing larger. They already eat up a *lot* of disk space. The company's 1989 releases averaged more than nine disks per package! And the programs themselves are compressed on those disks. It goes without saying that Sierra strongly recommends that users have a hard drive.

Even hard drives have their limitations, though.

For one thing, they're a destination, rather than a distribution, medium. Publishers still have to produce all those floppy disks; the more ambitious the game, the greater the number of disks required to get the program in the hands of consumers. The greater the number of disks, the more expensive the product becomes. (There are unexpected considerations: With some of its current games, Sierra is reaching the maximum number of disks that can be placed in its standard packaging.)

Then, too, there's the problem of hard disk space.

The solution? Larger storage and distribution media. Ideally, storage and distribution should be combined.

And today that means CD-ROM.

Room for One More

CD-ROM (Compact Disc–Read Only Memory) has for some time been touted as the ideal electronic publishing medium for large amounts of information. A CD can store about 650 megabytes of data, which translates into tens of millions of words, hundreds of pictures, or about an hour of sound.

Already well established among

business and institutional users, CD-ROM has fared less well on the entertainment side of the industry. While some entertainment products have appeared, notably Mediagenic's *the Manhole* and *Cosmic Osmo,* many industry observers believe a substantial CD-ROM entertainment industry must await the arrival of dedicated CD-ROM entertainment machines.

Nonetheless, Sierra, foreseeing substantial growth in CD-ROM drives in the home, decided in early 1989 to proceed with the development of its first PC CD-ROM product, an adaptation of Roberta Williams' *Mixed-Up Mother Goose.*

Why Mother Goose?

Mixed-Up Mother Goose, already successful on traditional floppy disks, became the CD-ROM test case because it's a relatively small game. The game's universe, a fairy-tale land with a castle at its center, is less expansive than a King's Quest or Space Quest adventure.

Accustomed to adapting games from one family of machines to another—IBM to Amiga, for example—Sierra's production teams anticipated few problems in preparing the CD-ROM version of *Mixed-Up Mother Goose.* But they learned quickly that this would not be just another conversion.

Some production aspects were simpler on CD-ROM. One of the chief advantages of CD-ROM is its ability to store digitized sound. The conversations and cues in the new version of *Mother Goose* will be spoken rather than appearing in text boxes on the screen. This is a parserless game.

The CD-ROM version of *Mixed-Up Mother Goose* will support 256-color VGA only. (Most entertainment software supports 16-color VGA/EGA graphics, as well as 4-color CGA.) While further restricting the market for the game, the decision also freed the production team to concentrate on enhancing the richness of the game's art.

Sierra's internal computer network was set up to simulate CD-ROM, and the team assigned to create *Mixed-Up Mother Goose* set to work.

In the Beginning Was the Word

At first, the CD's spaciousness delighted Sierra's game designers. When you have more than 600 megabytes to play with, the world seems boundless. When you start digitizing voices, the boundaries close in quickly.

"We've always been restricted by the barrier of storage," says Scott Murphy, one of *Mixed-Up Mother Goose's* designers. "How much can you get on a disk? How many disks can you get in a box?" With CD-ROM, it's different. "There's so much potential here, so much you can do. When the music and sound started coming together, we really began to get excited."

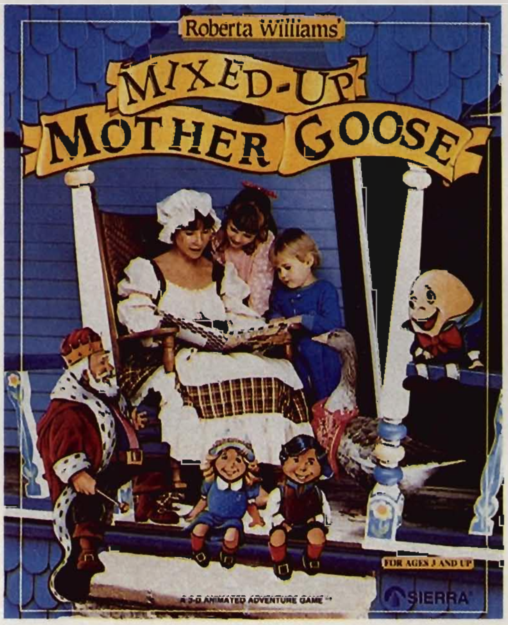
The music and sound will occupy the bulk of the CD's storage space. Even high-resolution VGA art will take only a minor portion of the disc's capacity. The game's code, thanks to newly developed compression techniques and routines, will actually occupy less storage space on CD than it did on magnetic disks. The storage demands of sound, however, are huge.

"We thought we had unlimited space," says Mark Crowe, a software/art designer. "We learned quickly how many limitations there are in 640 megabytes."

A script was written for the new version of the game, and Crowe jokes that, had it been produced, the game would have sprawled over three compact discs.

Gradually, the group came to understand the constraints on the amount of speech the game could contain. The script was honed and refined. A musical score was composed; actors were hired to perform the spoken roles. Techniques were developed to take better advantage of the possibilities that CD-ROM offers.

Not all of those advantages will be realized with this first release. Among the other things Sierra's developers are looking at are routines that will shape each character's mouth to fit the syllables being spoken, making the dialogue appear as realistic as it sounds.



Sierra On-Line's first CD-ROM, *Mixed-Up Mother Goose,* will have over 600 megabytes of 256-color VGA graphics, music, and digitized voices.

Here's an exclusive sneak preview of Sierra On-Line's upcoming adventure game, *King's Quest V.*

THEY'RE BACK!

MONOPOLY
COLLECT $200.00 SALARY AS YOU PASS
GO
RISK
Clue MASTER DETECTIVE
More Suspects, More Rooms, More Weapons
SCRABBLE
crossword game

ON A COMPUTER NEAR YOU

	IBM	APPLE II	MAC	C64	AMIGA	ATARI ST
SCRABBLE®	$39.99	$39.99	$39.99	$29.99	$39.99	$39.99
MONOPOLY®	$39.99			$29.99	$39.99	$39.99
RISK™	$39.99	$39.99	$39.99	$29.99	$39.99	$39.99
CLUE® MASTER DETECTIVE™	$39.99	$39.99		$29.99	$39.99	$39.99

Monopoly® © 1935, 1985. Produced under license from Parker Brothers, division of Tonka Corporation. Risk™ © 1959, 1989. Used under license from Parker Brothers.
Clue® Master Detective™ © 1988. Produced under license from Parker Brothers, division of Tonka Corporation, and Waddingtons Games Limited.
Scrabble ® Licensed by Selchow and Righter Company, a subsidiary of Coleco Industries, Inc. Scrabble board design © 1948 Selchow & Righter Company.

Virgin Leisure Genius

Distributed by:- VIRGIN MASTERTRONIC INTERNATIONAL Inc.
18001 Cowan, Irvine, California 92714 U.S.A.
Telephone (714) 631-1001 Telefax (714) 631-1004

MASTERTRONIC

Circle Reader Service Number 105

CD-ROM: IT'S NO FAIRY TALE

Some Like It Hot

Although graphics occupy only a small portion of the CD's physical storage space, the art preoccupied quite a few people at Sierra for some time. VGA's 256-color palette meant Sierra could deliver a far richer visual experience than is common in most computer games.

To enhance the art even further, the game's developers made one of their boldest decisions: The art for *Mixed-Up Mother Goose* wouldn't be generated on the computer at all. Rather, the major scenes and settings would be created with airbrushes, and the airbrushed art would then be scanned and digitized. Airbrushing afforded many opportunities, but it also provided its own share of problems and decisions.

"We had to establish a palette that was 'hot' enough to translate [through the scanner]," says Cheryl Sweeney, who did most of the airbrush work for the project. Although she had little computer experience when she began working on the game, Sweeney quickly learned how to accommodate digital demands.

"The colors that we're using lose some of their 'heat' once they're digitized," she says. Taking that into account, she created paintings that are a little brighter and a bit hotter than desired. The digitizing process brings those colors down to the right levels for VGA screens.

The results are striking. The best scenes in the CD-ROM version of *Mixed-Up Mother Goose* possess a vividness and depth that are far beyond what we're accustomed to seeing in computer games. Ultimately, many at Sierra feel the marriage of hand-drawn art and digital computers will lead to wholly hand-animated games, software projects that may rival classic Disney or Warner Bros. cartoons.

Scrambled Universe

Although the universe of *Mixed-Up Mother Goose* isn't huge, it is complex, which can be a problem for a game that's designed to be played by young children. The game's interface overcomes much of this complexity by taking as its central metaphor a baby's busy box.

Using the mouse, children can push levers to speed up or slow down the game or adjust the volume of the sound. Subordinate screens show a map of the fairy-tale kingdom as well as the number of golden eggs the child has earned for solving the game's puzzles.

Most of the screen is occupied by the fairy-tale kingdom through which the player moves. (Players can, incidentally, select the gender and race of their onscreen character.) Using the mouse, the player navigates through the kingdom, encountering scrambled versions of classic Mother Goose rhymes. The player's job is to unscramble them.

That unscrambling takes place in the most vivid interactive entertainment environment I've seen—or heard, for that matter. Picture and sound work together beautifully. Small touches, such as rippling water and the constant background animation of falling leaves, add to the illusion.

Investing in CDs

Bob Heitman, who was responsible for much of the coordination of the CD-ROM *Mixed-Up Mother Goose,* feels that Sierra has not only broken new ground, but has also taken a long step toward the future of interactive entertainment. For some time, Sierra has endorsed the idea of true interactive motion pictures. It could be that CD-ROM will make such products possible.

That won't happen overnight. For one thing, there are very few CD-ROM drives currently in homes. The price of drives remains prohibitive for most consumers; average drive prices are between $800 and $1,100. Additionally, there remain several unresolved questions concerning CD-ROM standards.

Not to mention marketing. While there are at present few CD-ROM drives in the home, Heitman feels confident that this situation will change. He sees Tandy's announcement of an internal CD-ROM drive as a step toward solving this problem. Rumors suggest that other manufacturers are preparing to release more affordable CD-ROM drives.

Tentatively set for summer release, *Mixed-Up Mother Goose* is a success before it sells a single copy. "This project gave us the chance to build our CD-ROM toolbox," Heitman says. "We've got routines, utilities, and techniques that will serve us well on future CD-ROM projects. And we've already got several projects in the planning stages." ▣

Beyond Mother Goose

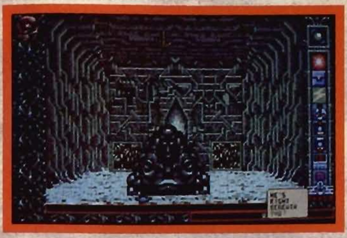
Among Sierra On-Line's future projects is a CD-ROM version of the next King's Quest adventure. Sierra's Roberta Williams, though, doesn't see CD-ROM necessarily leading to bigger interactive stories.

"Richer ones, I think," she says. "We'll try to develop the characters more fully, try to understand the intricacies of the story. I want to try to get away from just putting together a jumble of puzzles in some sort of simplistic plot on some sort of meaningless quest. And you really don't have any idea who you are and why you're here."

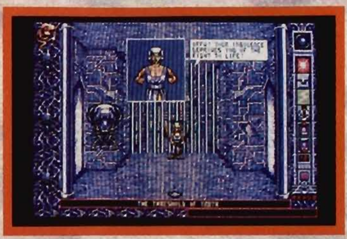
CD-ROM and other technologies give Williams hope that the computer game will continue to evolve. "I want to give players a sense of character, a clear sense of what you're doing and why, with some emotion behind it. At least the important characters should be developed, with relationships and recognizable personalities."

Character, emotion, visual and aural detail—all on one CD-ROM disc?

Not necessarily. The next Roberta Williams adventure will definitely appear on CD. And its creator is already dropping hints that *King's Quest V* may be the first double-CD game.

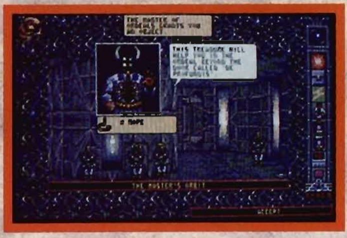


HE'S RIGHT BENEATH YOU!



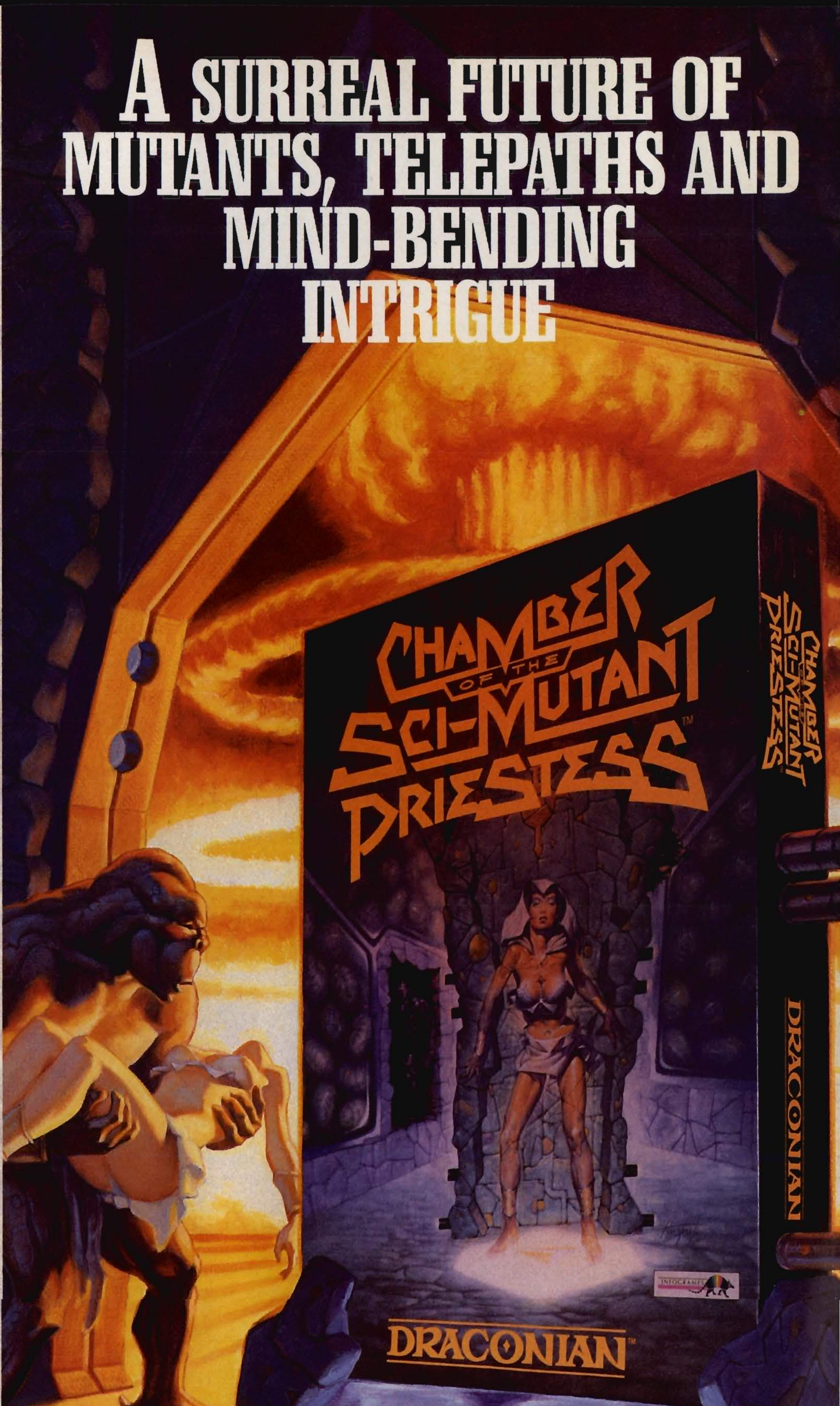
ARGH! YOUR INSOLENCE DEPRIVES YOU OF THE RIGHT TO LIFE!

THE THRESHOLD OF TRUTH



THIS TREASURE WILL HELP YOU IN THE

THE MASTER'S ORBIT


A SURREAL FUTURE OF MUTANTS, TELEPATHS AND MIND-BENDING INTRIGUE
CHAMBER OF THE SCI-MUTANT PRIESTESS™
INFOGRAMES
DRACONIAN™
CHAMBER OF THE SCI-MUTANT PRIESTESS
DRACONIAN
ONCE YOU ENTER THE WORLD OF DRACONIAN, YOU WON'T WANT TO COME BACK!

Enter the *Chamber of the Sci-Mutant Priestess*—the second sensational title in the Draconian line—and explore a bizarre post-burn world caught in the throes of mutant treachery.

Set on a distant planet, the *Chamber of the Sci-Mutant Priestess* combines mystic drama and humor with a sophisticated icon interface, so players can easily maneuver through the game's captivating plot.

You play the role of Raven, a Tuner, whose telepathic abilities provide a unique advantage when fighting the enemy—a monstrous race of mutants called Protozorqs.

Command eight sci-powers with "iconomized" ease as you probe the chambers of the mutants temple, searching for your abducted girlfriend while engaging in a brain-draining test of five ordeals.

Animated and colorful, the *Chamber of the Sci-Mutant Priestess* promises hours of challenging intrigue for novice and expert fantasy game players alike. Don't miss out on the first psionic thriller of its kind—from Draconian!

Available for the IBM™/PC compatibles, Amiga™ and Atari ST™ personal computer.

Drakkhen: © & TM 1989 Infogrames. United States and Canadian copyright Data East USA, Inc. Manufactured by Draconian under license from Infogrames. Chamber of the Sci-Mutant Priestess and Draconian are registered trademarks of Data East USA, Inc. IBM, Amiga and Atari ST are registered trademarks of International Business Machines Inc., Commodore Electronics Ltd., and Atari Corp., respectively.

DRACONIAN™

Circle Reader Service Number 104

Data East, 1850 Little Orchard Street, San Jose, CA 95125 (408) 286-7074.

GAMESCOPE

HINTS AND TIPS FROM OUR READERS

RESCUING ROSELLA

AND PUMMELING POPULOUS

Here are some clues to get you through the tough spots in *King's Quest IV: The Perils of Rosella.*

Be sure to search the dwarves' house after they've eaten. Give them back any valuables you find in their mine.

Save your game often when encountering the shark and the troll. They both seem to appear and act randomly.

When in the whale, climb the tongue from bottom right to top center and tickle him with the feather.

Only use one of Cupid's arrows on the unicorn; you'll need the other one for the wicked witch.

John Harris
Richmond, OH

Aerial Rearming

Here's a tip for Spectrum HoloByte's *Falcon.* It may not work on all versions, but it has been tested on the Amiga and Atari ST.

When you run out of bullets or missiles, hold down Ctrl and press X. This will give you 500 bullets and eight AIM-9L missiles. You can repeat this as often as you need to during combat.

Brian Davidson
Wilmington, NC

Larceny with Larry

I've found a way to get unlimited points in *Leisure Suit Larry III: Passionate Patti in Pursuit of the Pulsating Pectorals.* When you're playing Passionate Patti, go to the piano lounge after you leave the penthouse. Your tip glass is on the piano. If you type *look glass,* the game will describe it for you. Type *take glass.* You'll be able to take the glass and get points for it. If you then type *look glass* again, even though there is no glass on the screen, the game will give you a description and you can take the glass again for more points. You won't get any extra money, but you'll keep getting points every time you do it.

You can also gain points after Patti finds her way out of the bamboo forest. On the screen with the cliff and river, take off your pantyhose. Patti will remove them onscreen and you'll get points. Walk off the screen and come back. Take off your pantyhose again and you'll get more points. You may do this many times and continue to build your score.

Jerry Luker
West Newbury, MA

Carrier Commandos

Ever make it through a marathon six-hour session of MicroPlay's *Carrier Command* only to find that you don't have enough weapons left to destroy the enemy carrier? If you have a couple of spare Walrus amphibious attack vehicles in your hold, you can damage the enemy enough to give you time to resupply.

Launch a Walrus and drive it toward the enemy carrier. Approach from behind and ram either rear hull corner a few times. Eventually your Walrus will explode and you'll have wiped out 35 to 40 percent of the carrier's engine power. Repeat this as many times as you can—you may even be able to cripple or destroy the carrier if you had damaged it already before the kamikaze run.

Kim Horn
Redondo Beach, CA

Populous Pointers

Here are some handy tips to help you win Electronic Arts' game of world domination, *Populous.*

Even though it's very difficult to do at the beginning of the game because of your limited power, you should raise all of your landscape two levels above the ocean and then flatten it all out. Use earthquakes and swamps to keep the enemy's landscape a single level above the ocean.

After you have a flat plateau two levels up, you'll quickly accumulate enough power to cause a flood, which will eliminate almost all of the enemy's followers. Use knights to finish off the rest.

Watch out for some random creatures who will mess up your well-planned conquest. These include a multilegged creature who builds rocks on your land and a wizard who flies over the countryside making trees. These and any others will show up in the map window in the same flashing color as an enemy walker.

John Pierce
Salem, VA

Stealing in *Starflight*

Short of money in *Starflight?* Thanks to a bug in the program, that's no problem. You can cheat the trade depot's computers and build funds fast.

Go to the trade depot and spend all of your money on fuel or minerals. Then sell it right back to the depot. When the computer asks you whether you want to sell all, select no. When it asks for a quantity, enter 100,000, even if you only have 5 units. No matter how much you actually have in your holds, the depot will pay you for 100,000 units.

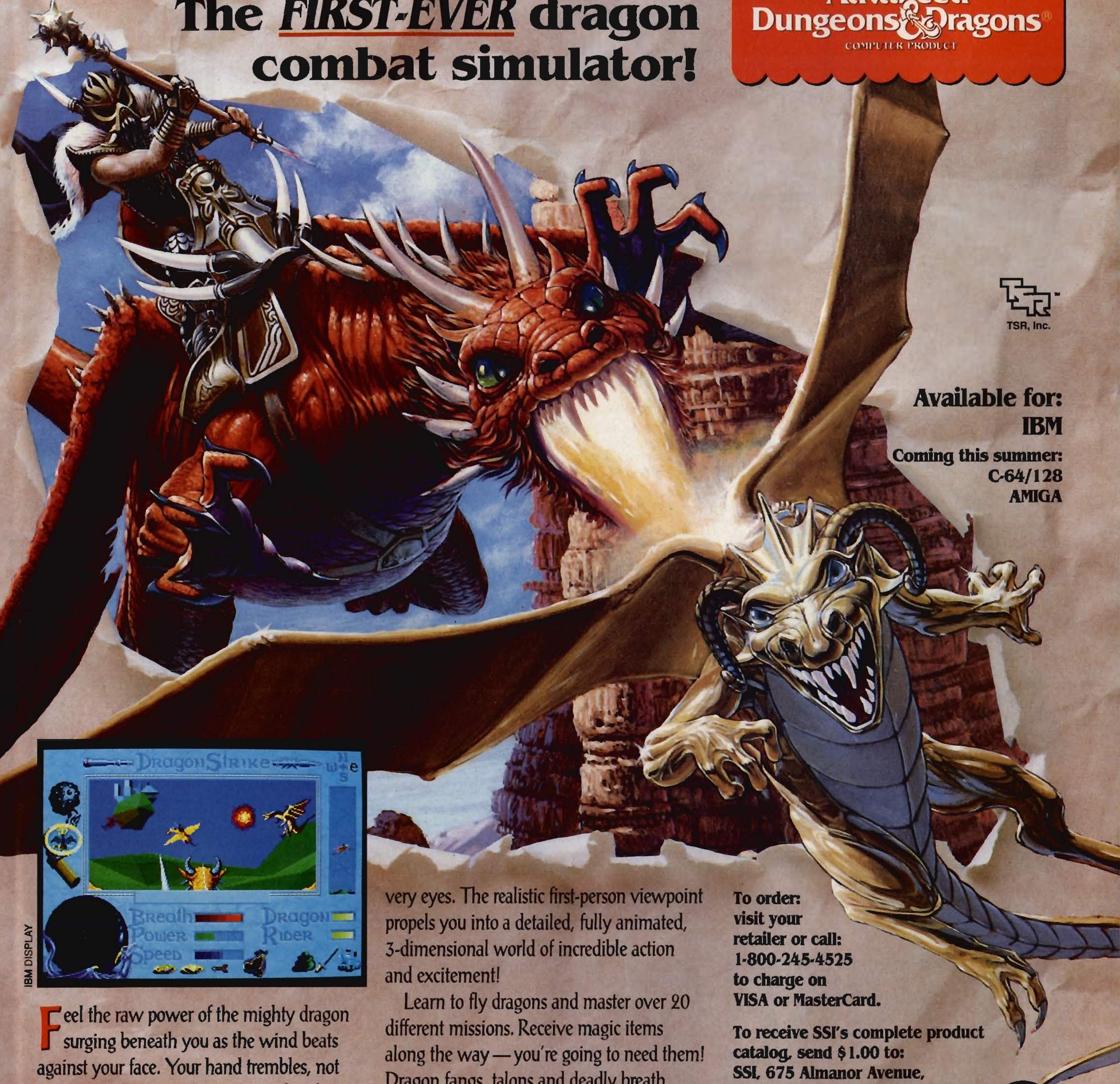
Frank Breneman
Indian Trail, NC

If you have game tips and shortcuts of your own, we'd like to hear from you. Send your tip, no matter how brief, to COMPUTE! Feedback—GameScope, P.O. Box 5406, Greensboro, North Carolina 27403. If we publish your suggestion, we'll send you a gift. ▣

DRAGONSTRIKE

The *FIRST-EVER* dragon combat simulator!

Advanced Dungeons & Dragons®
COMPUTER PRODUCT



IBM DISPLAY

TSR™
TSR, Inc.

Available for:
IBM
Coming this summer:
C-64/128
AMIGA

Feel the raw power of the mighty dragon surging beneath you as the wind beats against your face. Your hand trembles, not from the heft of your dragonlance, but from anticipation of the battle that is to come. The air screams with the fury of enemy dragons and creatures — even flying citadels!

This is DRAGONSTRIKE, where the deadly skies above the AD&D® DRAGONLANCE® game world of Krynn explode before your very eyes. The realistic first-person viewpoint propels you into a detailed, fully animated, 3-dimensional world of incredible action and excitement!

Learn to fly dragons and master over 20 different missions. Receive magic items along the way — you're going to need them! Dragon fangs, talons and deadly breath weapons are just a few of the dangers you'll face in the fierce heat of dragon combat!

To the skies brave knight — and victory!

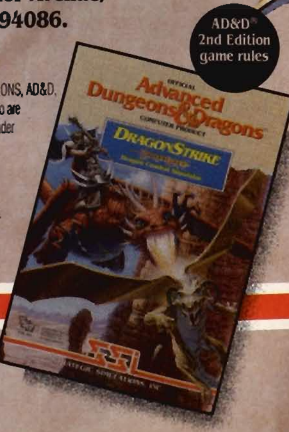
To order:
visit your
retailer or call:
1-800-245-4525
to charge on
VISA or MasterCard.

To receive SSI's complete product catalog, send $1.00 to:
SSI, 675 Almanor Avenue,
Sunnyvale, CA 94086.

AD&D®
2nd Edition
game rules

ADVANCED DUNGEONS & DRAGONS, AD&D, DRAGONLANCE, and the TSR logo are trademarks owned by and used under license from TSR, Inc.

©1990 TSR, Inc.
©1990 Strategic Simulations, Inc.
All rights reserved.

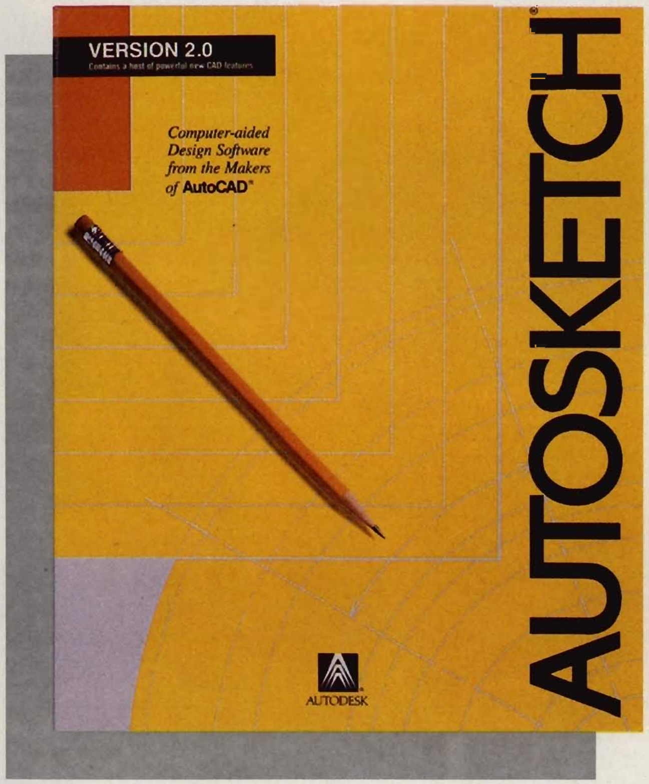


SSI™

STRATEGIC SIMULATIONS, INC.®

LEARNIN

LEARN DESIGN AND DRAFTING SKILLS WITH THIS SUPRISINGLY POWERFUL, INEXPENSIVE COMPUTER-AIDED-DESIGN PROGRAM


VERSION 2.0
Contains a host of powerful new CAD features
Computer-aided Design Software from the Makers of AutoCAD
AUTOSKETCH
AUTODESK

Mark Wagoner

COMPUTE! CHOICE

BRUCE HAASE

Computer-aided design (CAD) used to be an arcane art, practiced only by engineers, architects, and product designers. At $3,000 and up for CAD programs, companies could afford them, but you or I couldn't. Nowadays, inexpensive CAD programs abound. While businesses may still spend big money for CAD programs, you don't have to. At least a dozen CAD software vendors now market programs that retail at under $300. These programs claim to be as powerful as high-end CAD packages but as easy to learn and use as paint programs.

Even AutoDesk, the company that virtually created the PC CAD market with its $3,000 *AutoCAD,* has entered the low-end CAD market with *AutoSketch.* Priced below $200, *AutoSketch* is affordable, easy to use, and powerful enough to meet the drawing requirements of a significant portion of entry-level CAD users.

To understand *AutoSketch,* you should know the differences between CAD programs and their paint-program cousins. Both let you draw images on the computer screen. Paint programs, such as *PC Paint, PC Paintbrush,* and *Dr. Halo,* are *pixel-oriented.* They build your images using your monitor's *pixels,* the dots that make up the image you see onscreen. While you may use circle or rectangle tools, for instance, to draw your picture, the computer only remembers the picture as a collection of different-colored dots.

CAD programs, on the other hand, are *object-oriented.* Each object is described mathematically. It has defined starting and ending points, a center or midpoint, and a description of what it is, what type of lines make it up, and the color of the lines. All of this information is stored for each object in a CAD drawing. When you draw a circle in a paint program, the software just lays down a set of pixels in the pattern of a circle. Once it's drawn, the program can't tell the circle from the rectangle it overlaps. On the other hand, the CAD program knows the object is a circle and can differentiate it from the other objects around it. Because of these differences, CAD programs have capabilities that paint programs lack.

G

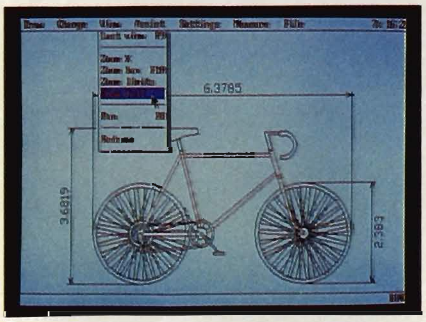
AUTOSKETCH
AUTOSKETCH
AUTOSKETCH
AUTOSKETCH
AUTOSKETCH
AUTOSKETCH
P2
P1
P1
P2
Welcome to the Autodesk Family
Quick Reference Guide

Mark Wagoner

If you draw a square, and within the square you draw two intersecting lines, the differences between CAD and pixel-oriented paint programs show up as soon as you begin editing. Let's say you want to double the size of your square and the length of the lines within it. Both types of programs can calculate the ratio between old and new. Both make the square and lines twice as big.

However, CAD programs know that the lines are actually lines. They keep those lines at their original thicknesses. Because pixel-oriented packages only remember what pixels are on or off, the square doubles in size, but the lines that make up the square will double in thickness, too. The pixels will be magnified as well, giving diagonal lines a blocky, stair-step look.

Because CAD programs keep track of each object, editing any object is a snap. If you want to erase an individual line within your drawing, you simply have to pick any point on the line. Since the program knows the starting and ending points of the line, it erases the entire line instantly. If the line crosses other objects in your drawing, CAD programs only erase your line, not portions of the other object. Pixel-based packages erase lines one pixel at a time. With most, you move an eraser icon along the line, rubbing out pixels as you go. Unfortunately, any lines intersecting the one you're erasing will have their pixels erased also.



Variable levels of magnification let you edit details or view the big picture.

CAD programs are infinitely better suited at line-drawing tasks. They shine at producing and modifying lines and objects created from lines, such as drafting and engineering drawings. And, of all the inexpensive CAD programs, *AutoSketch* is one of the best.

AutoSketch requires at least 512K of RAM but likes to find 640K. A graphics monitor (Hercules, CGA, EGA, VGA, 8514/A, or PGA) and two disk drives are also required. A mouse, although not mandatory, is highly recommended. So is a math coprocessor. *AutoSketch* works fine without a math coprocessor, but it works up to ten times faster with one.

AutoSketch comes complete with a 180-page manual and CAD tutorial, sample drawings, a quick-reference card, and two sets of program disks. The first one, the Standard set, doesn't require a math coprocessor but will use it if it finds one. The second set is called *AutoSketch Enhanced.* This program does require a coprocessor. The *Enhanced* program offers additional features and commands and is three times faster than the standard version (even the standard version with a coprocessor).

Installation is simple. Just copy three disks to a subdirectory on your hard drive, or create a set of working disks if you're using a floppy system. *AutoSketch* brings up a configuration menu automatically the first time the program is run. Answer some questions about your monitor, pointing device, and plotter or printer, and you're ready to go. You can't edit the configuration after you complete the process, so if you answer incorrectly or upgrade your hardware, you'll need to go through the entire configuration process again.

Commands can be selected using

pull-down menus or function-key shortcuts. To draw a line, you select Line from the Draw menu or simply hit Alt-F1.

AutoSketch uses a Cartesian coordinate system. The starting and ending points of lines are recorded as being so many units away from point (0,0). This is the same system that you learned in high school algebra class and said you'd never have any need for in real life.

In CAD, this coordinate system is sometimes referred to as *absolute*. *AutoSketch* considers the screen's lower left corner as (0,0). A line starting two inches up and three inches to the right of (0,0) has an *x* position of 3 and a *y* position of 2.

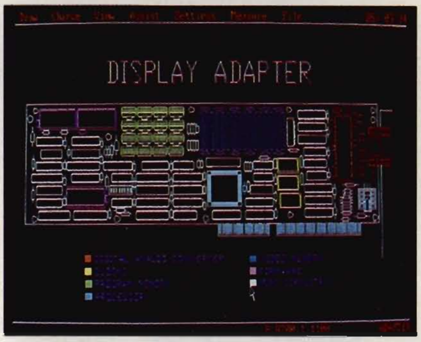
Exact starting and ending positions, as well as a precise length measurement, are critical in CAD drawings. Blueprints and engineering drawings must be precise. Instructions such as *Start somewhere around here and make it just about so long* don't cut it in CAD. *AutoSketch* gives you two excellent aids that help you precisely position your line's endpoints. You can use the Grid and Snap tools, which will make your line automatically start and end at the closest mark in a predefined grid. If Grid and Snap are set to 0.5 inch, no matter where you place the mouse, your line can only start and end on one-half-inch increments.

You can also enter precise coordinates from the keyboard. For example, hitting Alt-F1 and then typing 2 2 5 3 will draw a three-inch line located two inches from the bottom of the screen and starting two inches from the left of the screen.

As your drawings get more complex, trying to relate everything back to the origin point in the corner of the screen can get tedious. *AutoSketch* lets you enter relative and polar coordinates so you can place objects a certain distance away from the last object drawn.

AutoSketch gives you a number of ways to manipulate objects that you've already drawn, including fillet and chamfer commands. Filleting rounds corners, while chamferring cuts them at an angle. To give a square rounded corners, simply tell *AutoSketch* how much rounding you want and click on the square. You can also change a line's color, size, and type (solid, dashed, dotted, hidden, centered, and so on). You can copy, move, or mirror an object. Let's say that you're drawing a part that's symmetrical (the left and right halves are mirror images of each other). Just draw half of it, and let *AutoSketch*'s mirror features draw the rest.

Of course, when you're creating a complex drawing, mistakes are bound to happen. Let's say that you move an object, rescale it, and then stretch one corner of it. Suddenly, you discover that you've done all of this to the wrong object. Simply press F1 or pick UNDO from the menu, and all the drawing commands you've issued are undone one by one in reverse order. If you undo too many actions, no problem. Just select REDO, and the step you just undid is redone. This set of commands should be mandatory in all CAD packages, but it's not—few have multiple levels of undo.



***AutoSketch* supports CGA, EGA, VGA, Hercules, 8514/A, and PGA graphics.**

There's no limit to a drawing's size in *AutoSketch*. Your drawing can be inches or miles across. *AutoSketch*'s manual recommends that you create your drawing at actual size (full scale) or a recognized scale (such as ¼ inch equals one foot). Obviously, a 12-inch monitor can't show a drawing at its actual size if the drawing is larger than the screen. If it's larger, *AutoSketch* either compresses your drawing's physical size to fit within the limits of your screen, or it uses the screen as a window on the larger drawing. With the Zoom command, you can enlarge any area of your drawing for detailed work. By zooming in, 1 inch on your drawing may actually take up several inches of your screen. By zooming out, 1 inch may only be 1/1000 inch or less. Screen zooms are dynamic and there are no set limits.

AutoSketch also includes features previously found only in expensive packages, such as an array command, which lets you copy an object several times to create a pattern. There's also a dimensioning command that allows annotations as well as showing each object's dimensions. You can fill an object with color. *AutoSketch* saves and loads files in the industry standard DXF format, allowing you to easily exchange files with *AutoCAD* and other drawing programs.

All of *AutoSketch*'s commands are laid out in an easy-to-understand manual that includes plenty of examples as well as a glossary of CAD terms. However, the manual doesn't include any actual lessons. AutoDesk should beef up the manual with tutorials taking you step by step from a blank screen to a finished drawing.

AutoSketch is best suited as a starter, or light-use, CAD package. For people involved in manufacturing, engineering, and drafting, *AutoSketch* lacks the horsepower an eight-hours-a-day productivity tool needs. It has all the standard commands and drawing aids but lacks the flexibility and brute force found in its big brother, *AutoCAD*. For example, *AutoSketch* gives you one way to draw an arc; *AutoCAD* gives you ten. However, *AutoCAD* costs around $3,000, so you may happily give up some of that flexibility.

Autodesk provides customer support for the program on CompuServe in its own Autodesk SIG area. Free support, tips from fellow users, and sample drawings and support-file libraries are all available on the network.

While learning *AutoSketch* won't prepare you to design Donald Trump's next building, you'd be hard-pressed to find a better CAD package to learn on. *AutoSketch*'s ease of use and light hardware requirements make it ideal for learning CAD on a home PC. The Undo and Redo commands can save hours of frustration when you're learning CAD techniques. And while Ford probably won't be using the program to design the next-generation Probe, it's powerful enough for light design work. If you're looking for all-around good value and the confidence that buying from one of the best-known CAD vendors brings, look no farther than *AutoSketch*.

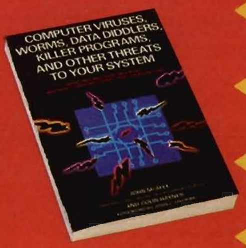
AutoSketch

IBM PC and compatibles with 512K—$149.95

Package includes manual, quick-reference card, and five 5¼-inch disks.

AUTODESK
2320 Marinship Way
Sausalito, CA 94965
(415) 332-2344

VIRUCIDE


COMPUTER VIRUSES, WORMS, DATA DIDDLERS, KILLER PROGRAMS, AND OTHER THREATS TO YOUR SYSTEM

FREE when you buy ViruCide – this $16.95 book is crammed with 236 pages of practical explanations and expert advice about computer viruses. You'll learn what viruses are, what they do and what you can do about them. It's a $16.95 value – but yours FREE with the ViruCide program.

Parsons Technology

375 Collins Road NE
Cedar Rapids, Iowa
52402

New ViruCide detects and destroys computer viruses.

NEW! Only $49!

"The computer virus problem is likely to become the single most critical issue facing computer users in the 90s."
--John McAfee

FRIDAY
13
Pay Day!

Friday the 13th viruses (there are several strains) stay in your computer's memory. On any Friday the 13th, they delete every program you run. The "Payday" variation erases all programs run on ANY Friday except a Friday the 13th.

How worried should you be?

Plenty. The Computer Virus Industry Association logged over 300,000 virus infections in 1989. Early reports for 1990 show the rate of infection is rapidly increasing.

At least 82 virus strains now exist. You can catch one from ANY external source — diskettes, networks and user bulletin boards.

The question is, 'Will you be protected if a virus strikes?'

What you don't know about computer viruses can wreak havoc on your system.

Once a virus latches on to your system, it begins to corrupt your files. Slowly. Invisibly. File by file.

While you work, the time bomb ticks...

Until that urgent report you slaved over is destroyed. Until all your data is corrupted.

The results? Ruined programs. Lost data. Your hard work down the drain.

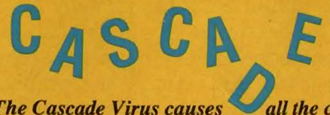
Prevention, vaccination programs not enough — you need protection!

Prevention and vaccination programs can trigger false alarms, costing you time, worry and money.

That's why John McAfee, one of the world's foremost computer virus experts, helped create and develop ViruCide. ViruCide detects and destroys currently known viruses, plus it repairs the infected programs in most cases.

ViruCide protects you in seconds... work with confidence and security.

You can run ViruCide from a floppy or hard drive, usually in less than a minute. We recommend using it when you load new software, and whenever you notice unusual error codes, slowdowns, application problems or the like.



The Cascade Virus causes all the characters on your screen to crash into a pile at the bottom. One variaton causes system reboots at random intervals.

Other computer viruses, like Brain, Fu Manchu and Stealth, may sound interesting, but the damage they can do to your system is equally destructive.

Circle Reader Service Number 157

ViruCide is menu-driven, extremely easy and simple to use. It searches every file, scanning for the signature codes that mean a virus has entered your system. When it detects a virus, ViruCide removes it and restores your program to normal. It even searches for and destroys viruses in memory before it begins a scan.

ViruCide puts you one step ahead and keeps you there!

As new virus strains emerge, we'll offer regular upgrades at special prices for ViruCide users.

Try ViruCide FREE for 30 days!

There's no risk. If you're not 100% satisfied, simply return it within 30 days for a full refund (excluding shipping).

ORDER NOW for same-day shipping!

Credit card and C.O.D. orders call

1-800-779-6000

24 hours a day, 7 days a week
In Canada call 319-395-7300
FAX: 319-395-0217
Or send check or money order payable to Parsons Technology.

VIRUCIDE

ParsonsTechnology, 375 Collins Road NE, Cedar Rapids, IA 52402 USA

☑ **YES! Rush me ViruCide!**
$49 + $5 shipping *Not copy protected.*
Includes printed manual and free technical support. Please print.

Name ______

Address ______

City ______ State ______

Zip ______ Phone (____) ______

☐ Check or Money Order ☐ MasterCard ☐ Discover
☐ American Express ☐ Visa

Card # ______ Exp. Date ______

Add $5 shipping/handling–$10 outside North America. Iowa residents, please add 4% sales tax. ViruCide requires an IBM/Tandy/Compaq or compatible computer, 256K or more RAM and DOS 2.0 or higher.

CODE= **06COM**

VIDEO AND COMPUTERS MAKE A HAPPY UNION

DAVID STANTON

Cameras! I've always hated them. Maybe the feeling started in childhood. About twice a year, usually at Christmas and in July, aunts, uncles, cousins, and an occasional sampling of greats and seconds used to gather at my grandparents' farm. There were about 70 of us—sometimes fewer, sometimes more. Our extended family was as close then as now, and we all enjoyed seeing each other. We usually ate and talked and played games and ate some more. These get-togethers were, for the most part, quite pleasant. Except for the cameras!

One uncle had an 8mm movie camera. Such things were uncommon then, and he enjoyed recording our meetings for future generations. Invariably, he'd load the film, plug in his glaring spotlight bar (pictures required plenty of light back then), and set out on his expedition. He was determined to capture on film every living creature around, and he usually did. One uncle carried the lights. The other wielded the camera, moving it somewhat inexpertly from face to face.

Mom waved and beamed the friendliest smile. Dad grinned ever so slightly. We children tried to hide. Failing that, we did our best to act normal, or at least what passed for normal in those preteen years. "How is a boy supposed to act when someone points a camera at him?" I wondered. I still do.

Fortunately, things have changed. Today's video cameras and camcorders are less intrusive than those old movie cameras. More to the point, they can mate with VCRs and computers to do some pretty neat things.

According to sources that are supposed to know, this integration of TVs, computers, camcorders, VCRs, and similar devices results primarily from the NTSC (National Television Standards Committee) video standard that has become popular throughout North America and in some other parts of the world. Devices that output NTSC video signals can send those signals to virtually any other device that accepts such signals.

VCRs, for example, generally have NTSC-compatible video- and audio-input ports as well as corresponding output ports. Video cameras and camcorders produce NTSC video output, which they send to VCRs for recording. VCRs, of course, ultimately display their images on standard television sets. Everyone knows all that.

What is less well known is how computers can be linked into the system. Many popular home computers provide NTSC video-out ports (usually an RCA-type jack intended for connecting a composite video monitor). The Apple IIGS, for example, has such a port, although it often goes unused since an RGB monitor comes packaged with that computer. I've connected the Apple IIe's video output directly to a VCR's video input without problems. Some Tandy 1000s have both video- and audio-output ports as standard equipment. Several other MS-DOS computers support NTSC video output, and those that don't can often be equipped with a special video board to add this capability.

By routing the video output from any of these computers to the video-input port of a VCR, you can send your computer's video through a VCR to a television set. There are at least three advantages to doing so: First, the trick can be used in classrooms to display computer output on large TV screens. Second, those with monochrome monitors can use this technique to view games and such in color on a color TV. Third, any image sent through a VCR in this manner can be recorded as part of a presentation.

Even older computers, like the TI-99/4A and others, that were designed to use a television as their primary display can be connected to VCRs. Just hook the RF modulator (the little black switch box that usually attaches to a television's VHF screws) to the VCR's VHF screws instead. The VCR will pass your computer's signal along to the TV even when the VCR is off. The important difference is that this configuration allows computer output to be recorded by the VCR.

Recording your lifetime, high-scoring computer game effort on videotape might be reason enough for some to connect their computer to a VCR. Those of a more serious mind might use the connection to create video presentations that walk friends through favorite word processors or other applications.

The real power, though, comes when you add a video camera to the mix.

Students in some schools already use such equipment to produce video reports. The research process remains the same as always. Students still must locate relevant facts, organize their notes, and write out their final papers. But video reports go several steps farther. Student producers present their work orally and supplement it with carefully selected footage of relevant people and places. With a little editing, they can enhance the final product with computer-generated screens for titles, graphs, and special effects. The same techniques could create dazzling travel videos or maybe even modern home movies of family reunions.

Maybe cameras aren't so bad after all. ⊡

MILLIKEN STORYTELLER

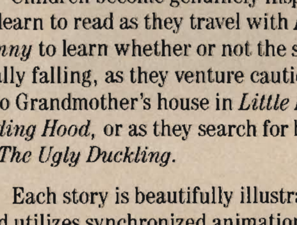
Real Human Speech Software

Ages 4-7

"ONCE UPON A TIME" WAS NEVER LIKE THIS!

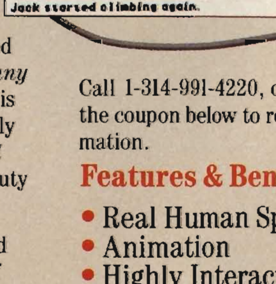
Introducing the Milliken Storyteller—the interactive computer storybook **featuring real human speech!**

Until now, software that has used "speech" to teach children how to read has been lacking in one important area—real human speech. Now, children can read and interact with some of their favorite fables while the story is being **narrated by a real person.** And best of all, no expensive speech hardware is required!*



Color the picture.

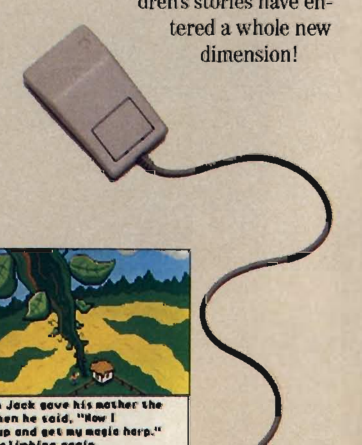
Go On



At the bottom Jack gave his mother the "magic hen. Then he said, "Now I will go back up and get my magic harp." Jack started climbing again.

Children become genuinely inspired to learn to read as they travel with *Henny Penny* to learn whether or not the sky is really falling, as they venture cautiously into Grandmother's house in *Little Red Riding Hood,* or as they search for beauty in *The Ugly Duckling.*

Each story is beautifully illustrated and utilizes synchronized animation of lips to words. Children have the option of responding to questions and suggestions, such as using the mouse to identify an object, giving them the opportunity to interact with the "page" on which they are reading. Rewards include activities such as being able to "color in" some of the screen art. Six of your favorite children's classics are available now for the Milliken Storyteller, with more new stories and concepts to be released soon! Experience the Milliken Storyteller to see how children's stories have entered a whole new dimension!



Call 1-314-991-4220, or send in the coupon below to receive further information.

Features & Benefits:

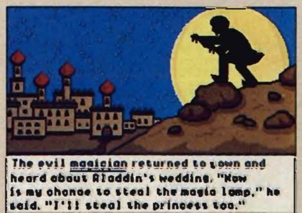
- Real Human Speech
- Animation
- Highly Interactive
- No Extra Hardware Required*
- Literature Based

NAME

ADDRESS

CITY

STATE ZIP



The evil magician returned to town and heard about Aladdin's wedding. "Now is my chance to steal the magic lamp," he said. "I'll steal the princess too."

Milliken Storyteller Master Package includes: Milliken Storyteller Driver Disks, Story Disks (*Henny Penny, Little Red Riding Hood, & The Ugly Duckling*), and a user's guide.

Apple® IIGS version (four 3.5″ disks)	$44.95
Tandy® 1000 TL** version (four 3.5″ disks)	$44.95
Tandy® 1000 SL** version (seven 5.25″ disks	$44.95
IBM® and compatibles** version (four 3.5″ disks, or seven 5.25″ disks; COVOX® speech hardware)	$69.95

Milliken Storyteller Story Collection I includes: Story Disks *(Jack & the Beanstalk, Aladdin & the Magic Lamp, & Peter Rabbit)* and a user's guide. The Milliken Storyteller Master Package must first be purchased in order to use the Story Disks.

All versions	$24.95

*IBM and compatibles may require Milliken Storyteller version which contains COVOX speech hardware.

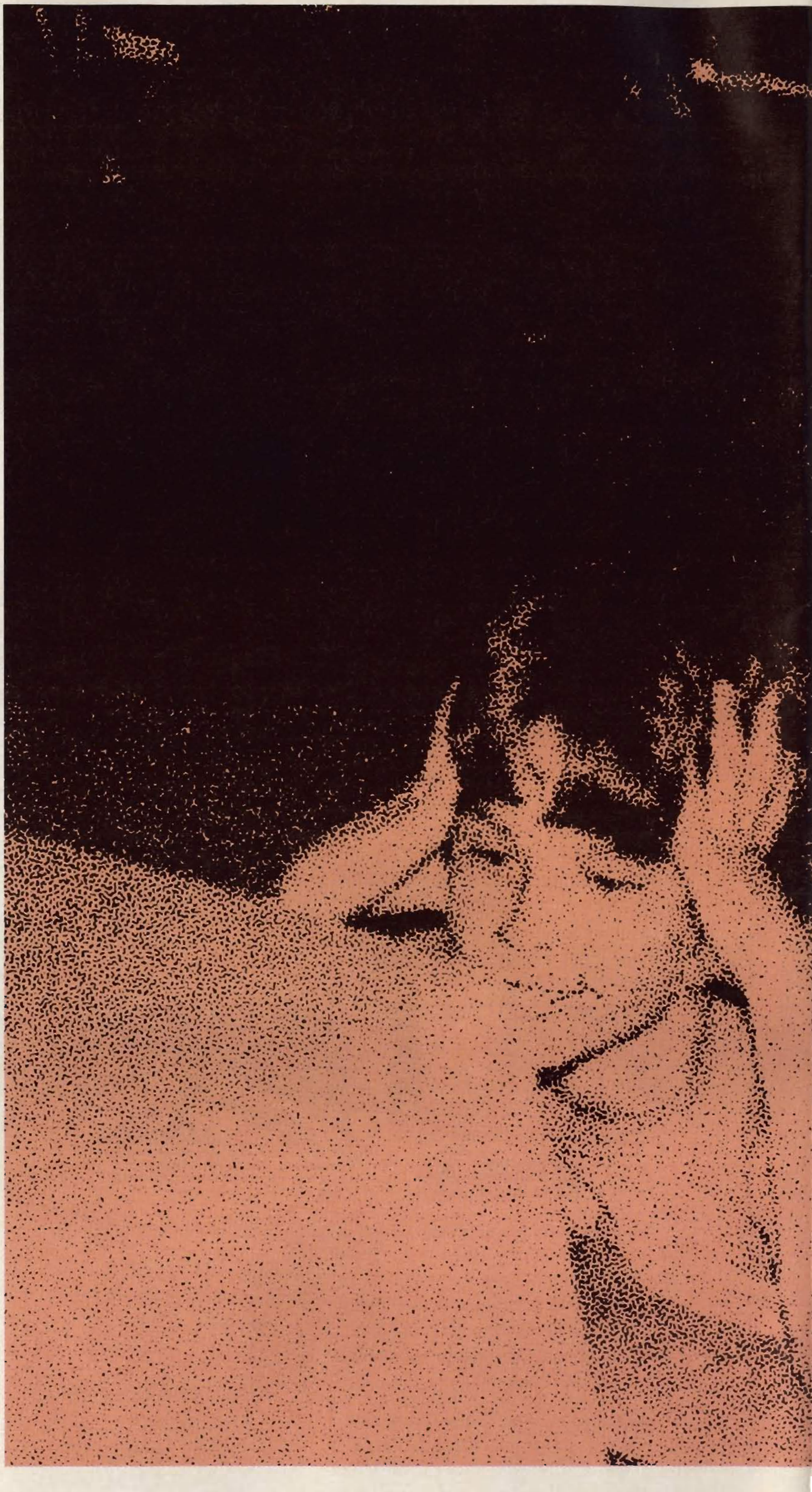
**Tandy 1000 TL & SL versions will also work on IBM or compatibles previously equipped with COVOX speech hardware.

Apple is a registered trademark of Apple Computer, Inc.; IBM is a registered trademark of International Business Machines Corporation; Tandy is a registered trademark of the Tandy Corporation; COVOX is a registered trademark of Covox Inc.

Milliken Publishing Co.
1100 Research Boulevard
St. Louis, MO 63132

MILLIKEN

Circle Reader Service Number 186



SUMMER

YOU SAY YOUR KIDS LOVE COMPUTERS? SIGN THEM UP FOR A SUMMER COMPUTING PROGRAM.

The temperature is rising, the days are getting longer, and your kids have the entire summer in front of them. This year, you want them to do something constructive—at least for part of the time. Perhaps you should consider a summer computing program.

A summer computing program can offer your kids a number of activities that aren't usually available in regular schools. These include taking on intricate programming projects, mastering complex applications such as word processing and desktop publishing, and experimenting with computer-based simulation, problem-solving, and thinking-skills environments.

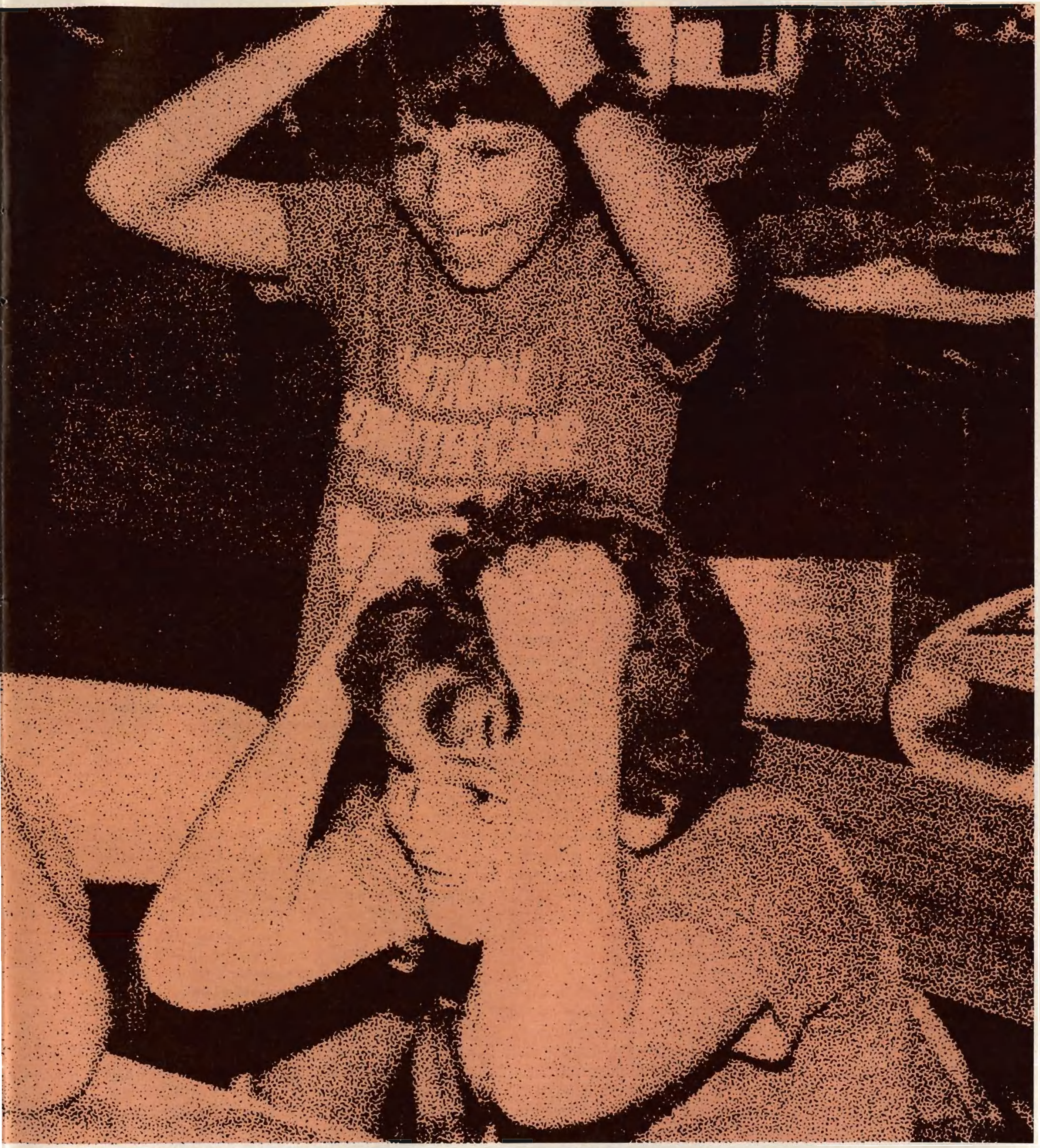
You can find these activities in a variety of settings including two types of resident camps: exclusively computer-oriented camps and traditional camps that offer select computer classes. Depending on where you live, you may also be able to find a variety of summer daytime classes.

Attention Campers

An example of a full-scale resident summer program is National Computer Camps, which is under the direction of the founding father of computer camps, Dr. Michael Zabinski. He's currently a professor of computer science and engineering at Fairfield University in Fairfield, Connecticut.

National Computer Camps accepts students ages 8–18, with an average age of 12 or 13. This program provides two main options: computer and computer, which combines formal computer instruction with creative computing for a total of ten hours of computer activity a day, and computer and sports, which divides the time between formal computer instruction and traditional sports activities.

Each camp group consists of 12 campers, one teacher, and one assistant. The campers work in teams of 2 during formal instruction and can choose Apple II– or IBM-compatible computers. Ability levels range from beginner to advanced. The main emphasis is on programming (including BASIC, Pascal, and C), with other computer activities—including time with modems and bulletin boards, word processors,



COMPUTING

MICHAEL C. PERKINS AND KELLY RIVERS

graphics programs, games, and music programs—being made available during creative computing and free time.

Camp fees are $460 for the first week and $400 for each additional week. The camp sites also offer recreational facilities for tennis, swimming, soccer, and other activities. Zabinski indicates that there's a 4:1 ratio of boys to girls, although he would like to see more girls involved.

As to the camps' uniqueness, Zabinski comments: "Our camps offer a special opportunity for students who don't get much computing in regular school but who would like to be doing a good deal more. They do machine language, BASIC, and Pascal, yet never repeat a level but instead are always able to advance as far as they want. Often, campers can do in three weeks what it would take a whole year of school to accomplish. Furthermore, our program is career-oriented, laying the foundation for many who go on to a life's work in computer science, engineering, and mathematics." This should be good news, given the number of recent studies that show an increasing shortage of computer scientists and mathematicians.

An Inside Job

Another type of resident computer camp is a camp-within-a-camp exemplified by Computer Summers, headed by Dr. David Sachs, Assistant Dean of the School of Computer Science at Pace University in White Plains, New York. Jane Dorian serves as Director.

The Computer Summers program is offered as an option along with the usual horseback riding, tennis, boating, and archery. During a two-week camp program, for example, a student could sign up for as many as ten hours of computer instruction, averaging about an hour a day during the week. This program uses Apple II–compatible computers, accepts children ages 6–15, and emphasizes programming (BASIC, Logo, and Pascal). Additional time is available for typing, word processing, graphics, and desktop publishing. Levels range from beginner to advanced.

Sachs says, "Because I work with many adults at Pace who are trying to master the intricacies of computer usage, I feel strongly that quality computer instruction for children will serve them well for the rest of their lives."

"We believe that our program offers a greater variety and higher-quality instruction than most schools are able to provide," Dorian adds. In the Computer Summers program, each child has his or her own computer. The fee for a two-week program is $425.

Just Passing Through

If an away-from-home computer camp is too expensive or otherwise unavailable, consider the increasing number of daytime programs offered through recreation and community centers, schools, and family-computing facilities.

In the San Francisco Bay Area, for example, a variety of options are available. Many recreation centers offer computing classes for children ages 5–13 with an emphasis on basic applications (such as word processing and database programs) and simulation environments, including computer-aided design (CAD) systems. The Palo Alto Junior Museum has offered summer-recreation computer classes for some years now. John Walton, the museum's director, explains: "We feel that the summer computer courses have been an essential offering of our science program for children. We particularly like the fact that the students learn the computer as a tool—something they can use much as one uses a camera or a saw in order to get something accomplished, but, at the same time, have some fun with it, too."

Mini-campers have plenty of opportunity to explore the exciting world of microcomputing.

Learning, fun, and friends add up to a great camp experience for your child.

These courses are offered on a three-week basis, meet twice a week for 1½ hours at a time, and cost $80 per child. The ratio is two students per computer.

A couple of other Bay Area programs, Screenplay and The Learning Street, emphasize family computing in their summer offerings.

The Learning Street summer courses teach age-appropriate skills (not including programming) on Apple II–compatible computers for children ages 3½–11. The Learning Street also offers classes just for parents, as well as classes in which the parent and child participate together. The emphasis, according to director Sharon Bonner-Brown, is to help children enjoy computers and realize their potential as effective tools for learning. "We approach them as 'bicycles of the mind,' " she says, echoing Steven Jobs' statement from nearly a decade ago.

Prices for The Learning Street range from $49 to $59 for 50-minute classes that meet four times, with ratios of two children per computer and one teacher per four children.

The Apple-sponsored Screenplay has a similar family orientation. It was conceived and is directed by Rita Levinson, who holds a master's degree in both computer science and education. In addition to classes in programming for older students, Screenplay also provides parent-child courses. "[These classes] provide an opportunity for parents and children to learn computers together in a relaxed, yet progressive, environment that allows for exploration, experimentation, and fun," says Levinson. The Screenplay fee is $105 for an eight-week course with a ratio of one computer per child or parent-child team.

Other representative Bay Area summer offerings include courses at neighborhood schools in computer typing, word processing, graphics, and programming. There are also classes in various tutorial centers that use computers for math and language arts.

Feast or Famine

In addition to the usual factors of cost and convenience, you should also consider the computer camp's or course's emphasis. Five to ten hours of computing a day might be computer heaven for one child but computer hell for another. Not all children will enjoy a camp exclusively given to computing; a structure that provides a variety of activities that includes computing may be better. Also, in spite of the traditional emphasis on programming, some children may benefit more from courses that emphasize applications, such as computer typing, word processing, and desktop publishing—skills that can carry over into schoolwork the next fall.

Giving children an opportunity to experiment with a variety of programs is sometimes better than having them concentrate on a particular area such as programming. On the other hand, if your child is a real computer enthusiast or shows a special aptitude for computing, then the resident computer camp could be the beginning of a lifelong career in computing. Age and level of interest are often the main criteria when it comes to choosing the best place for your child.

Shopping Around

In addition to the nationwide sampling provided here (see the accompanying sidebar), you can find information on summer computing in many publications for parents (both local and national), in Sunday newspaper supplements (such as the *New York Times Magazine*), and in a number of other publications oriented toward leisure and the family (including *Better Homes and Gardens* and *Sunset Magazine*).

For local and daytime offerings, you should consult summer-school and recreation- and community-center bulletins. There are also camp brokers who can carry out an extensive search for the kind of summer opportunity you're looking for and provide information on ones you may not have considered. You can find the brokers by looking in the Yellow Pages.

In the final analysis, no matter which summer computing option you choose, it will offer something of value to your child that might not otherwise be available outside the summer computing environment. ⊡

Michael C. Perkins and Kelly Rivers are independent computer-education consultants who have organized and directed children's summer computer programs for a number of years.

Summer Computing: A Sampling

Here's a starter kit of summer computer camps throughout the United States and courses in the Bay Area.

Computer Summers
P.O. Box 436
South Salem, NY 10590
(914) 763-8829
President: David Sachs, Ed.D.
Director: Jane Dorian
Sites: California, Colorado, Florida, Georgia, Massachusetts, Missouri, New Jersey, New York, North Carolina, and Texas

The Learning Street
3732 Mt. Diablo Blvd.
Suite #158
Lafayette, CA 94549
(415) 283-4914
President: Sharon Bonner-Brown
Director: Diane Flynn
Sites: Select East Bay Area schools and community centers

National Computer Camps
P.O. Box 585
Orange, CT 06477
(203) 795-9687
Director: Michael Zabinski, Ph.D.
Sites: Waterbury, CT; Cleveland, OH; Atlanta, GA

San Francisco Bay Area Computer Camp Information
c/o Perkins & Rivers
P.O. Box 1207
Menlo Park, CA 94026

Screenplay
500 Remillard Dr.
Hillsborough, CA 94010
(415) 343-5133
Director: Rita Levinson, M.A., M.S.
Site: Neighborhood Montessori School, Hillsborough, CA

Student Camp and Trip Advisors
San Carlos, CA 94070
(415) 592-7189

HOMEWORK

HINTS AND TIPS FROM OUR READERS

WORD GAMES AND KIDS

ON KEYS

Playing word games is a lot of fun and can help kids develop their vocabularies and writing skills. Here's one that you can play using your PC and any word processor that has a thesaurus.

Create a simple story using your word processor. Then sit down with your kids, and, choosing words from the built-in thesaurus, replace some of the words in your file with synonyms or antonyms. For instance, you could change *the quick brown fox jumped over the lazy dog* to read *the speedy tan carnivore leaped over the sedate canine.* This will help build your kids' understanding of words' exact meanings and when it's appropriate to replace some words with others. Keep a dictionary handy to help you decide if a word is an appropriate replacement.

Kim Horn
Redondo Beach, CA

Find and Replace, Please!

Certain words in the typical student vocabulary tend to have a deleterious effect not only on student grades but also on a teacher's mental and emotional well-being. While *really, fantastic,* or *radical* seem harmless enough to the student, after being used for the umpteenth time in a stack of papers being graded close to midnight, these words may in fact edge the poor pedagogue even closer to anger or irrational behavior, perhaps even a career change. In the hallowed halls of higher education, students can offend with *utilize, viable,* and *parameters,* words more misused than incorrect.

To save that grade point average and salvage teacher mental health, students can take advantage, not only of the spelling checker and revision features of their word processors, but also of the search and replace features. Keep a list of those words that make your teachers see red, as well as words you've been cautioned about, and let your word processor help you through the tedium of proofing your papers. Make sure that you have a thesaurus and a dictionary handy to help you substitute just the right word. You'll find that maintaining the list and running it through your find feature not only improves your proofreading but also increases your sensitivity to the problem of vague or misused words.

Michael B. Hudnall Jr.
Greensboro, NC

Kids on Keys

It's amazing how excited young children get when they realize that they can control something. The computer is a great tool for introducing them to the concept of cause and effect.

One way to show very young children how they can control a computer's actions is to let them change the screen's color by pressing a key. Their excitement will help them feel more comfortable with the computer and less intimidated by the huge rows of keys.

I wrote a special program that changes the screen color when you press a function key. Pressing function keys F1 through F5 will change the screen color to black, blue, green, light blue, and red, respectively. You should put a colored sticker on each function key that corresponds to the color it produces. If you don't have suitable stickers, use Magic Markers to color a few small strips of masking tape and place the strips on the key tops.

You can enter this program yourself using the Debug program included with MS-DOS. You'll also find it ready to run on this month's *SharePak* disk.

To create the program, type in the following lines. The plain roman text represents the computer's prompts. You should type the boldfaced text.

```
A> DEBUG SETCOLOR.COM

File not found
-e 100 B8,03,00,CD,10,B8,00,B8
-e 108 8E,C0,2B,C0,CD,16,8B,D8
-e 110 25,FF,F0,3D,00,30,74,07
-e 118 80,FB,1B,74,1B,EB,EB,81
-e 120 E3,00,0F,80,FF,0B,7C,E2
-e 128 80,EF,0B,86,E7,2B,FF,B9
-e 130 D0,07,B0,B2,F3,AB,EB,D2
-e 138 B4,4C,CD,21
-rcx
CX 0000
:3c
-w
Writing 003C bytes
=q
```

Now, run SETCOLOR and watch your kids have fun. Hit the escape key to exit the program.

Richard C. Leinecker
Reidsville, NC

Do you have advice that makes a better teacher out of your PC? If so, we'd like to hear from you. Send your tip, no matter how brief, to COMPUTE! Feedback—Homework, P.O. Box 5406, Greensboro, North Carolina 27403. If we publish your suggestion, we'll send you a gift. ◻

LIGHTEN YOUR LOAD, ENJOY GEOGRAPHY, PURSUE PECTORALS, EXPERIENCE POWER, EXPLORE ASHTALAREA, LEARN ALGEBRA, WRITE LIGHT, BUILD RAILROADS, AND MORE

T1000SE

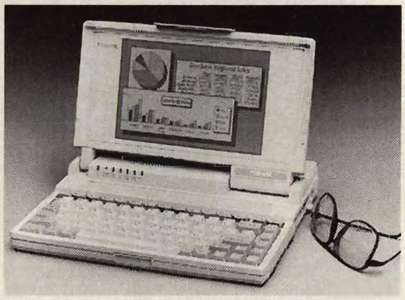
Sleek, slim, powerful, portable—four words that sum up one of Toshiba's latest additions to its venerable 1000 series of laptop computers. The T1000SE puts everything you need for no-nonsense portable computing into a package weighing less than six pounds; it makes few sacrifices in either design or functionality.

Powering the T1000SE is an 80C86-2 16-bit microprocessor that can be switched to either a 9.54 or a 4.77-MHz clock speed by means of a Fn-PgUp or Fn-PgDn key combination. The machine draws its juice from a rechargeable ni-cad battery that gives you two hours of power under normal circumstances. When the machine isn't in use, the main battery maintains data for seven days; a backup battery will keep your data alive for another 12 hours after the main battery is fully discharged.

If you're not satisfied with the one megabyte of memory that comes standard on the machine, you can add two more megs by using memory cards. However, using these cards will drain your battery more quickly; one megabyte of RAM is plenty for most users.

The T1000SE's 82-key keyboard is compatible with the IBM enhanced keyboard and is a pleasure to use. The keys react solidly, giving ample feedback for touch-typists. Twelve undersize function keys are arranged along the top of the keyboard. A numeric keypad is available by pressing the Fn-F10 Overlay combination, which activates numeric and math function keys incorporated into the standard keyboard set.

The Fn key, when used in conjunction with the Esc key, also gives you access to the T1000SE's PopUp menu. This menu is extremely valuable, for it's from here that you can check and reset the laptop's configuration. The menu consists of two pages. The first page lets you define the T1000SE's remaining battery capacity, turn the speaker on or off, choose either Boot or Resume mode, and set the battery alarm on or off. From the menu's second page you can turn the optional internal modem on or off, set the LCD display to Normal (dark letters on a light background) or Reverse, and activate the screen-blanking utility to conserve battery life.


Toshiba's sleek T1000SE is six pounds of no-nonsense portable computing.

All of the PopUp menu's utilities are welcome additions to an already fine machine. For example, the battery gauge can be set to F (for Full) when the battery is completely charged, giving you a graphic reminder of how much life is left in your traveling companion. It doesn't give you an onscreen countdown as *Battery Watch* does, but it's better than just a warning beep followed immediately by a blank screen—which is what you get with most laptops.

Another commendable feature of the T1000SE is its use of a HardRAM disk. Essentially, this is a segment of RAM that you configure much like a virtual disk, but with one notable exception: The HardRAM disk is nonvolatile as long as the backup battery is charged or the removable battery is installed and charged. You can format and use the HardRAM disk as you would any other disk.

The default size of the HardRAM disk is 128K, but you can configure the entire 384K of memory above the 640K DOS limit if you like. Of course, any RAM you assign to the HardRAM disk is sacrificed from expanded memory; so, if you're planning on running EMS applications, you may want to limit the size of your HardRAM disk.

Like the Tandy 1100 FD laptop, the Toshiba T1000SE comes with DOS 3.3 in ROM. You can boot up the computer without ever having to insert a disk, and you can perform routine DOS functions without having to switch floppies.

That's handy because the T1000SE offers only one floppy drive. When you consider that it's a 1.44-megabyte 3½-inch drive, however, the one-drive limit isn't at all confining. It's more than enough space to hold a major application—like a word processor—and accompanying data files.

Other hardware features include a 9-pin RS-232C serial port, a PRT/FDD port to which you can connect a parallel printer or an optional 5¼-inch floppy disk drive, and a 100-pin proprietary expansion bus connector for other optional Toshiba devices. There is also room for the firm's optional 2400-baud internal modem.

Your eyes will welcome the T1000SE's backlit supertwist LCD screen, which boasts a CGA-compatible 640 × 400 display. Display modifications are made possible with the laptop's CHAD command, which lets you determine how certain display modes are represented onscreen by use of different foreground and background colors and font thicknesses.

Although some reviewers have found fault with the character display of the T1000SE, I found it to be a great improvement over many other laptops, including the Toshiba T1100 Plus I use when traveling. The font makes characters distinct on the screen and from each other—a real boon to tired eyes that have to keep working to meet a deadline.

All in all, Toshiba's T1000SE is a welcome, worthwhile addition to the 1000 series. Street prices for the machine were hovering at around $1,150 at the beginning of March, making it an affordable second computer and a strong adversary of the Tandy 1100 FD. Laptops are, more than any other system, the computers of the nineties. Technological leaps are bringing weight and price down. Displays are getting better, with color already here on more expensive models. The T1000SE is a strong step into the next decade of computing, whether it's your first step or your second.

PETER SCISCO

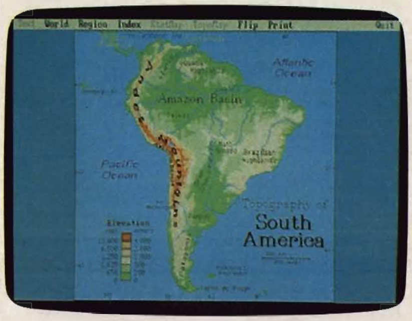
T1000SE—$1,699
Memory expansion card—$699 (1 megabyte); $1,199 (2 megabytes)
2400-bps modem—$349
External 5¼-inch 360K floppy drive—$499

TOSHIBA AMERICA
Computer Systems Division
9740 Irvine Blvd.
Irvine CA 92718
(800) 334-3445

SOFTWARE TOOLWORKS WORLD ATLAS

Not long ago, some far-sighted individual observed that computers would make the world a smaller place. How small? Small enough to fit in a desktop computer, thanks to the *Software Toolworks World Atlas.*

At the heart of *Atlas* is a massive database containing the makings of some 238 maps, as well as hundreds of pages of text-based information on 45 different geographically oriented topics. All of this comes on a whopping 17 disks—16 program disks and 1 installation disk—and you'll need roughly five megabytes of hard disk space to give all that data a happy home. And set aside a comfortable chunk of time because, as you might imagine, installation takes awhile. But thanks to a straightforward install routine, it goes without a hitch.



Let *Software Toolworks World Atlas* teach you more about geography.

A key to *Atlas* is its easy-to-use graphic interface. Across the top of the screen, a menu bar provides access to the program's main features; move the cursor to a menu-bar item, and a detailed drop-down menu automatically appears. It's point-and-click at its finest—you won't have to learn a single special command.

The program opens with a map of the world that shows and identifies 14 major regions. Move the cursor onto one of the region names and a box appears around the name. Then press a mouse button (or the Enter key), and within seconds, a detailed map of that particular region comes to the screen.

The region maps show national borders and the names of countries. To look at a specific country, simply move the cursor to the country name, select it, and the country's map appears.

Atlas offers several ways to move to different regions or countries. The names of adjacent regions or countries are shown whenever a region or country map is displayed, and you can call them simply by selecting the appropriate name.

More distant areas aren't hard to reach, either. One approach is to return to a main map and work through the selection process, but *Atlas* provides a genuinely useful index option that makes it much easier. This index (available at all times) lists all countries, cities, rivers, mountains, and other physical features that appear in the atlas. The left column of the index lists the feature; if that feature happens to be a capital or city with more than 100,000 people, you see its population, too. The right column identifies the map on which it appears. All you have to do to travel to any one of these features is select the listing. It's fast and easy—and for armchair travelers like me, it's undeniably fun!

Atlas is more than maps, however. The STATMAP option gives worldwide statistical information, all shown on one single map. Another option, TEXT, gives you easy access to outline-style information on a country's geography, people, government, economy, and communications. TOPOMAP shows topographic data, either for the whole world or for regions (but not for individual countries), and the LEGEND option lets you toggle a drop-down color-coded map key on and off. Another option, FLIP, lets you flip back and forth between any two maps.

One of the most useful options may well be the program's flexible PRINT feature. It lets you print maps in a variety of ways, for example, with or without text. A variety of printer types, including HP LaserJet and IBM/Epson, are supported. You can also print maps to disk, although the manual notes that *Atlas* uses BIOS calls when doing so. Some antivirus programs may interpret this as viral activity.

Software Toolworks World Atlas works with monochrome monitors, although text on some maps will be hard to read. On color monitors, however, it's exceptional. The program supports a Microsoft or compatible mouse but can be controlled from the keyboard without difficulty. When under keyboard control, the NUM LOCK key toggles between fast and slow cursor movement. In crowded regions of the world, you'll need to switch to slow speed to avoid overshooting your destination.

What's missing? More detail. It would be nice to have maps of individual states and provinces, for example, or even to have state and province boundaries shown on country maps. Topographic information on individual country maps would also help. I wouldn't mind sitting through a few more disk loads if such information could be added.

An overall impression? Like most other map programs, *Atlas*'s ease of use and eye-catching graphics go a long way toward making geography fun. However, like many of the other programs, it lacks the detail that serious map users may require. For detailed trip planning or serious geographic investigations, you'll still need your trusty hardbound atlas. For a quick and thoroughly entertaining look at the world, however, *Software Toolworks World Atlas* may be just what the geographer ordered.

STEVE HUDSON

IBMs and compatibles with 640K, 6MB of free disk space or CD-ROM, and at least EGA; floppies—$59.95, CD-ROM—$159.00

SOFTWARE TOOLWORKS
1908 Nordhoff Pl.
Chatsworth, CA 91311
(818) 885-9000

LEISURE SUIT LARRY III: PASSIONATE PATTI IN PURSUIT OF THE PULSATING PECTORALS

Good old Larry Laffer, the lovable leering lounge lizard we've all come to know, love, and avoid like the plague at parties, is back for another adventure. Sierra's *Leisure Suit Larry III: Passionate Patti in Pursuit of the Pulsating Pectorals* is the latest, funniest, and raciest of the Leisure Suit Larry (LSL) adventures. And this one has a twist: Halfway through, you switch sexes!

If you've never played any of the previous LSL games, let me introduce you to Larry—a short, balding, nondescript little guy with a penchant for white leisure suits that would make even John Travolta circa 1977 cringe. Larry hasn't had a lot of luck with the babes in the past. He spends all of *LSL1* trying to meet the girl of his dreams, only to be dumped by her at the beginning of *LSL2*. After risking life and limb to destroy the evil Dr. Nonookie during a fast-paced island adventure, he settles down at the end of *LSL2* and marries the island princess Kalalau. And lives happily ever after, right?

Not our Larry. His incredible streak of (bad) luck continues, and at the start of *LSL3* he finds that Kalalau has left him—for another woman! Humiliated for the last time, Larry vows to go back to swinging singlehood—no more serious relationships for him! He undergoes a magical transformation, rids himself of natural fibers, pops back into his sparkling white leisure suit, and goes back to play the field.

Leisure Suit Larry II Goes Looking for Love (In Several Wrong Places) disappointed many players because it was less racy than even family-hour TV shows, and the plot wasn't very strong. *LSL3* does a great job of addressing those criticisms. Though far from raunchy, it's definitely risqué. Before he meets the woman of his dreams (again), he has a few (mis)adventures with the beautiful inhabitants of an island, all of whom have names ending in the letter *i*. And, unlike in *LSL2*, Larry does . . . well, let's just say he's lucky for once.

After a few hilarious encounters, though, Larry meets that someone special. Yep, our Valentino has met the only woman for him (again). Of course, he's not going to win her charms immediately. Passionate Patti thinks he's a bit on the heavy side. And having heard he's married, she wants to see divorce papers. So, a few more adventures ensue.

Leisure Suit Larry 3

Pursue pulsating pectorals with Passionate Patti in *Leisure Suit Larry III*.

After a visit to the law offices of Dewey, Cheatem, and Howe, Larry heads off to the spa to get into shape. It's here you'll run into one of the most frustrating puzzles in the game. Perseverance and another read-through of the included island guidebook will pay off, though, and Larry will be able to get into the weight room. After a hilarious animated scene, Larry gets so pumped up that even Hans and Franz would feel like girlie-men in comparison. He's ready to go back and find his true love.

Unfortunately, after their passionate encounter, Patti mumbles something that breaks Larry's heart. Feeling dejected, Larry heads off into the Nontoonyt sunset, convinced that Patti is just like all the rest of the women he's known.

Here the game takes a unique turn. In another animated sequence, Patti realizes Larry has gone and vows to get him back. When the sequence ends, you find yourself in control of Patti instead of Larry! Giving the ladies equal time for once, the game has you guiding Patti on her quest to find Larry. And a grueling quest it is.

Larry has wandered off into the wild Nontoonyt jungle, and, before you go after him, you need to gather some survival supplies. You might as well stop off at the local male strip revue on the way (we begin to see that Larry and Patti have a *lot* in common).

Finally, you're off into the maze of jungle vines. If you wander aimlessly through the woods, you'll never finish the adventure. Once again, a hint lies in the guidebook. It's not easy to find, though—you'll find this a peach of a puzzle.

After making it through the woods and past the feral pig, you face a terrifying obstacle: a Sierra arcade sequence. The adventure-game parser just isn't optimized for fast-action games, and it shows. This sequence is frustratingly difficult. Even arcade whizzes will have problems with it, as some obstacles appear so quickly that there is absolutely no possibility of getting out of their way. The only way to make it through is to save *very* often—like every three seconds or so.

Don't give up, though, because your reunion with Larry and the sequences that follow it are absolutely hilarious. I don't want to give any of it away, but suffice it to say that *LSL3* is definitely the funniest of the Larry games. Even when you accidentally send Larry and Patti to their respective dooms, their demise is so comic that you're too busy laughing to get too mad at the game for killing you.

Sierra has improved its game-development language a lot over the last year or so, and it shows in *LSL3*. The graphics are better, the game's reactions are faster, and there's a lot of background animation in many of the scenes. Unfortunately, the palette seems to be optimized for EGA screens, so if you're running the program on a VGA machine (or even on an Amiga or ST), you have to look at people with red faces.

Sierra seems to care a lot about the quality of the sound and music in its games. *LSL3* supports the Roland MT-32, Ad Lib, GameBlaster, and IBM sound cards. And while the music is well done, it's also appropriate for a man of Larry's tastes (or lack thereof). Much of it sounds like bad Muzak interpretations of old Carpenters songs. But the music is always appropriate for what's going on in the game, a refreshing change from the unchanging drone of many game tunes. ▷

The game asks a series of questions at the beginning to gauge the age of the player. While this should keep the kids from playing at the Really Raunchy level (which is actually a strong PG-13 at worst), be aware that your play level is stored with saved games. So if you don't want little Billy to play the game, you're better off hiding it in a subdirectory somewhere.

This game is entertaining, funny, slightly sexy, and challenging without being overly complex. Only one thing really disappointed me about this game. It appears from the ending that this may be the last Leisure Suit Larry adventure. I hope not, but if it is, we'll just have to wait for *Leisure Suit Larry: The Motion Picture,* rumored to be in the works.

DENNY ATKIN

IBM PC and compatibles—$59.95

SIERRA
P.O. Box 485
Coarsegold, CA 93614
(800) 326-6654

TANDY 4016 SX

Time is money, as the old saying goes, and Tandy has introduced a computer that helps you save both. The 4016 SX is a powerful entry in the business computer market, offering a lot of speed, features, and room for expansion. With this computer, you can really get down to business.

The 16-MHz 80386SX microprocessor at the heart of this system speeds you through your work with its 32-bit address bus, moving your data much faster than the 16-bit path of an 80286 or the 8-bit path of an 8088. If you're accustomed to using an older 8088 like mine, you'll appreciate the noticeably faster operation of the 4016 SX. The 4016 SX will run any software written for the 80386 as well as software for the 8088 and 80286. In combination with a fast hard drive, the 4016 SX microprocessor will speed you through number-crunching or desktop publishing jobs that would have created a logjam in your business day with less powerful computers.

In addition to power and speed, the 4016 SX offers flexibility. You can run your programs in a traditional MS-DOS environment or use OS/2's multitasking capability to help you speed through your business activities.

Today's applications use internal memory much more efficiently than before. At the same time, programs and operating systems have become increasingly memory hungry. The 4016 SX offers plenty of memory, thus allowing you to use these programs and save time. It comes with 1MB of 100-ns RAM memory, expandable to 4MB on the motherboard by replacing the four 256K SIMMs with 1MB SIMMs. While no one knows what future business applications may require in the way of memory, this machine will let you expand all the way to 16MB. Doing so, however, will require the use of two memory-expansion cards.

Tandy's 4016 SX has the power and speed to save you time and money.

I never cease to be amazed at how much power and storage can be placed into such a small area, and the 4016 SX is a truly amazing machine in this respect. The system box measures a mere 15½ × 15 inches and stands only 4½ inches high, so it's a heck of a lot smaller than the older, less powerful computers. It's no desk hog—yet the internal workings don't seem crowded.

Two side-by-side 3½-inch bays grace the top front of the computer. One of them contains the standard 1.44MB floppy. These are a slim 1-inch high, and believe it or not, you can buy a 1-inch-high 40MB or 80MB 3½-inch IDE (hard) drive to occupy the empty one. Below these drives you'll find a 5¼-inch bay—a necessity for people like me with extensive collections of 5¼-inch floppies. Actually, the built-in high-capacity controller can handle two 3½- or 5¼-inch floppy drives but, unfortunately, you're limited to no more than three drives, hard or floppy.

A variety of devices can occupy the bays, including a tape backup system or even a CD-ROM drive. It's also possible to install an SCSI hard drive in the system. In my dream configuration, I would place an 80MB hard drive in the extra 3½-inch bay and a 5¼-inch floppy in the lower bay.

One real surprise is that the system box has only three card slots, but if you think about it, that's probably all the average user will need since so much is built right into the motherboard. The IDE hard drives with built-in controller require only the drive bay, no slots. Just make sure, however, that you use AT IDE drives with 40-pin connectors, and if you install one in the upper bay, it must be one-inch high. The VGA video adapter is likewise built-in, so you don't need to install a separate video card in one of the slots. The computer comes standard with a parallel port; an RS-232 serial port, which could be used with an external modem; and a PS/2-style mouse port—all built right into the motherboard. You can use your card slots for extra memory (I really can't see anyone needing more than one memory board), for a fax board, or perhaps for a hard card.

The design of the system box makes access and installation easy and provides a certain amount of security. The plastic outer shell slides away to reveal an inner metal box, two sides of which join near the middle. Tandy provides two keys to a lock that gives you access to the two sides. Pull back the left side, and you see the easily accessible card slots, the four sockets for SIMM memory, and the clock battery conveniently attached to the case with Velcro. From the middle, tilt up the right side, and you have easy access to the various drive bays, DIP switches, the coprocessor socket, and jumpers. How I wish I had faced such an easy arrangement when trying to install drives and memory in my old XT.

The system I tested came with a superfast 19-ms 40MB 3½-inch Smart Drive (Tandy's IDE) and a Tandy VGM-300 monitor with outstanding clarity. A less expensive black-and-white VGA is available. Unfortunately, Tandy makes you pay extra for the VGA monitor and hard drive that come standard with many comparable systems.

What may very well justify Tandy's higher price is the Tandy reputation. With Radio Shack stores all across the country, advice and repairs are likely to be more convenient. And Tandy is a company you can count on to be there for years to come. If your business depends heavily on your computer, Tandy's reputation and convenience may well make the extra expense worthwhile.

Compare your business needs with the features of the 4016 SX.

From the standpoint of speed, power, expandability, and service, buying this computer makes good business sense.

MIKE HUDNALL

Tandy 4016 SX with 1MB of RAM, VGA graphics adapter, and 3½-inch 1.44MB floppy drive—$1,999

RADIO SHACK
A Division of Tandy
700 One Tandy Center
Fort Worth, TX 76102

KNIGHTS OF LEGEND

Set in the medieval realm of Ashtalarea, *Knights of Legend* is a spectacular role-playing game full of wondrous adventure. And because Ashtalarea is actually just the first of several regions in the larger *Knights of Legend* role-playing system, your opportunities for further adventure are great indeed. Origin promises additional regions in the form of inexpensive modules that will include new lands, nonplayer characters, monsters, quests, and puzzles to solve.

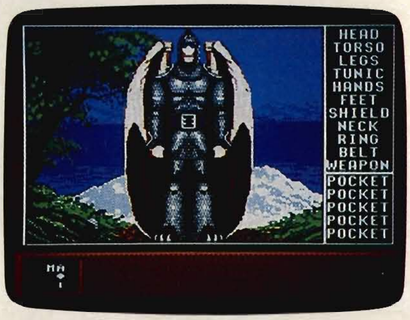
Although your ultimate quest in *Knights of Legend* is to rescue the brave knight Seggallion from Pildar, Ashtalarea's resident Dark Lord, the residents of Ashtalarea will first send your party of errant adventurers on 24 smaller quests. Each successfully completed quest earns your party a medal from the person who assigned the quest and, more importantly, provides valuable experience that will prepare you for your final challenge.

Before you can begin to play *Knights of Legend,* you must assemble your adventuring party. Choose each member by selecting a name, race (human, elf, dwarf, or kelden), sex, and class. Each race has its own set of available classes, and the class you choose helps to determine a character's strength, quickness, size, health, intelligence, charisma, and other traits. Eventually, you get to select from among dozens of graphic figures to represent your characters onscreen.

Knights of Legend even comes with a simple graphics editor that allows you to customize these figures. You may create as many characters as you'd like, but only six can be taken adventuring at any one time.

Just about every action in *Knights of Legend,* from attacking orcs in the wilderness to knocking on doors in town, is controlled by clicking on the icons that appear at the bottom of the screen. Selecting some of these produces additional icons. For example, during combat, selecting the attack icon will bring up a second set of icons, these allowing you to choose the type (hack, slash, or thrust) and the location (head, torso, or legs) of the attack. Finally, several icons depicting defensive strategies are displayed.

Besides a superb combat system, *Knights of Legend* also has one of the most flexible magic systems of any role-playing game I've seen. What's unique about this system is that each spell name consists of five or six syllables, each of which has specific meaning in the Elven language. Together, the parts of a spell describe the race of the characters it's to be used against, the trait (such as strength, intelligence, and so on) that it will affect, how powerful it will be, its range, and the subclass of the creature that it's to be cast upon.



Explore the realm of Ashtalarea and find high adventure in *Knights of Legend.*

The main advantage to this system is that, by mixing and matching the parts of a spell you've already learned, you can modify the spell to work against a different class or affect a different character trait. As you might expect, combining Elven syllables to form spell names can lead to some bizarre-sounding incantations with even stranger effects. TYANAWONTA, for instance, will seriously hurt all dwarves at close range, while casting VORVORWYRAMI can, according to the manual, "greatly decrease the intelligence of a skeleton at long range for minimal duration."

While, on the whole, I think *Knights of Legend* is one of the best role-playing games to come out in a long time, you may find a couple of things about the game slightly annoying. First, the only way to save your progress in the game is by checking into an inn in one of Ashtalarea's many towns, and then paying to put each character up for the night. This works fine as long as you can make the journey to the next town and have enough gold to pay for your lodgings, but often you'll find that one or two characters in your party don't have enough gold to stay at the inn. Now, with most role-playing games you could simply have one of your other characters give a less fortunate fellow adventurer some gold so that everyone could get a good night's sleep but, unfortunately, *Knights of Legend* has no icon to represent the pooling of gold.

One way around this problem involves trading to the impoverished adventurer some piece of equipment such as a shield or weapon that can be traded for gold at the local smithy. There may even be a couple of other ways around this problem, but so far this is the only one I've come up with.

Despite this inconvenience, I can still recommend *Knights of Legend* without reservation. The game comes with a quick-reference card that explains the functions of all the various icons, a full-color map of the Realm of Ashtalarea, and a hefty 142-page manual that's nicely organized and illus-

COLOR RIBBONS & PAPER

RIBBONS: Red, Blue, Grn., Brwn., Purple, Yel.

Ribbons Price Each	Black	Color	Heat Transfer
Apple Image I/II	3.75	4.50	6.50
Apple Image II – 4-Color	–	7.50	10.50
Brother M1109	4.95	5.95	7.00
C. Itoh Prowriter Jr.	7.00	9.00	–
Citizen 120D/180D	5.00	6.00	7.95
Commodore MPS 802/1526	6.25	7.25	–
- MPS 803	4.95	5.95	7.00
- MPS 1000	3.95	4.95	6.75
- MPS 1200/1250	5.00	6.00	7.95
Epson MX80/LX800	3.75	4.25	6.75
IBM Proprinter	5.75	8.00	12.00
Okidata 82/92	1.75	2.25	4.50
Okidata 182/192	6.50	7.50	6.00
Panasonic K-XP 1080	6.75	7.75	–
Seikosha SP 800/1000	5.25	6.50	7.95
Star NX10/NL10	5.00	6.00	7.95
Star NX1000	4.50	5.50	6.75
Star NX1000 – 4-Color	–	8.75	–

T-SHIRT RIBBONS (Heat Transfer) – Red, Blue, Grn., Brwn., Purple, Yel., Blk. Call For Price & Availability.

COLOR PAPER

BRIGHT PACK – 200 Sheets/50 each color: Red, Blue, Green, Yellow. 9 1/2 × 11 – $11.90/pk.

PASTEL PACK – 200 Sheets/50 each color: Pink, Yellow, Blue, Ivory. 9 1/2 × 11 – $11.90/pk.

COLOR BANNER BAND PAPER – 45 ft./roll – $9.95/ea.

For ribbons & paper not listed above, call for price & avail. Price & spec. subject to change w/o notice. Min. order $25.00. Min. S&H $3.50 min. Visa, MC, COD.

RAMCO COMPUTER SUPPLIES
P.O. Box 475, Manteno, IL 60950 U.S.A.
(U.S.A.) 800-522-6922
(Canada) 800-621-5444 • 815-468-8081

Circle Reader Service Number 167

trated and incredibly thorough. As usual, Origin has produced some stunning graphics while carefully creating a host of nonplayer characters with opinions, attitudes, and enough personality to make Ashtalarea a place you'll definitely want to visit.

BOB GUERRA

IBM PC, Tandy, or compatible; 384K; CGA, EGA, Tandy 16-color, or Hercules—$49.95

ORIGIN SYSTEMS
P.O. Box 161750
Austin, TX 78716
(800) 999-4939

FAST LOOKS

SWITCH-IT

How would you like to load several programs at a time and switch between them? If you have an 80386-based machine with megabytes of RAM, you can use *Windows 386, DESQview 386,* or even OS/2. But what do you do if you don't have a 386 computer and a truckload of memory?

You can use *Switch-It.* On any PC with as little as 256K, it's designed to spool programs to conventional memory (up to 640K), expanded memory (EMS version 3.2 or higher), or disk (floppy or hard drive). With extended memory, you can use a ramdisk to simulate a floppy drive or use a device driver to simulate expanded memory.

To run multiple memory-resident programs (TSRs), give each TSR its own slot and treat it as an application. You can also capture text from one program and copy it to another.

Switch-It works well, except with graphics-based programs that write directly to the screen. Some, like *Welltris,* simply lock up when you try to switch. Others, like *Flight Simulator* 4.0, let you go to the *Switch-It* menu and return again but distort the graphics display.

Keep in mind that these problems affect programs only when you switch. You can run just about any graphics-based program as long as you quit the program before you run another. In fact, *Switch-It* handles many graphics programs better than *Windows* and *DESQview,* which have similar problems with graphics-based programs.

If you run mostly text-based programs, and you have a PC with extra memory or disk space, check out *Switch-It.* It's an excellent solution for those of us who like to use more than one application at a time.

DAVID ENGLISH

IBM PC and compatibles with 256K (hard drive or expanded memory recommended)—$99.95

BETTER SOFTWARE TECHNOLOGY
55 New York Ave.
Framingham, MA 01701
(508) 879-0744

ALGE-BLASTER PLUS

Got the I-can't-do-algebra blues? Grab a copy of *Alge-Blaster Plus* from Davidson & Associates and you'll be well on the way to a cure. With 500 different problems to solve, structured help available at the click of a key, and drills on concepts ranging from integer arithmetic to simplification of complex radical expressions, *Alge-Blaster Plus* offers something for everyone who needs to learn algebra.

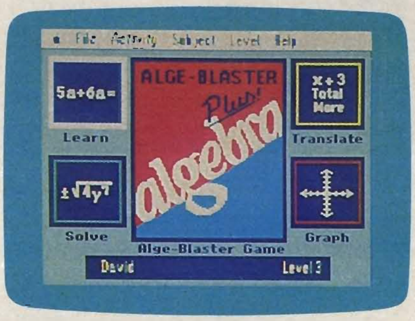
Looking for the fun side of algebra? The *Alge-Blaster* game is a space-age version of a shooting gallery with asteroids for targets and laser beams for guns. To fire a gun, you must correctly specify the slope of the desired blast. Do it right and you'll blow the asteroids out of the sky and protect your space station. You can even create webs around your space station by specifying end points and letting the computer draw the lines. These webs will absorb energy from the asteroids, even as they give you practice in visualizing the resulting line from a pair of coordinates.

More concerned about acquiring facts? Begin by using the Learn and Solve options to set up your own private tutorial session. Pick your subject from nine different topics, including Order of Operations, Factoring, Algebraic Fractions, and Quadratic Equations. Control the difficulty by setting the level and adjusting the availability of help. In the Learn mode, the program teaches you how to solve sample problems through a combination of interaction and lecture. Use the Solve option to practice your new skills, finding the answers to ten problems in order of gradually increasing difficulty.

Having trouble translating an algebraic equation from a phase (a number decreased by 2) to a formula ($x - 2$) and back? The Translate option offers sets of random multiple-choice problems at three different levels. You can't get help directly, but you can learn just through a lot of practice.

Is drawing lines on a graph or predicting the appearance of a line from its slope causing difficulty? *Alge-Blaster* provides both a tutorial and a game that focus on graphing skills. Use the Graph option to practice finding the slope of a line and locating and labeling the points on the graph. All input, good or bad, leads to immediate feedback. Turn on the optional timer and you're in a race against the clock.

Alge-Blaster Plus doesn't just cover a year of algebra; it surrounds and conquers it. Almost every conceivable topic is covered, most in considerable depth. But if you notice that one's missing, don't worry. There's an editor built into the program, and you can add your own problems. It's even possible to customize the hint routines. The recordkeeping option has room for 25 different users, and Davidson offers a 30-day money-back guarantee, good even if the package has been opened and the disks used!



***Alge-Blaster Plus* provides a fun and interesting approach to learning algebra.**

The program has only one major weakness, and this problem reflects a predicament almost as old as algebra itself. Unfortunately, many of us find math boring. And while the constant drill is well done and the immediate feedback is reassuring, the program needs something more to keep you working. I had to twist the arms of several of my young testers to keep them going, even though they freely admitted their need for additional practice. Contributing to the interest problem is the lack of randomness in the Learn and Solve modes. At any one level, in any one subject, the same problems are presented in the same order every time. An optional timer in the Solve mode might spice up this section a bit. On the other hand, the

Alge-Blaster game is quite entertaining and can be used as a carrot if necessary.

Alge-Blaster Plus offers enough to keep a good student busy for a long time; and weak students, who most need the additional practice, may be thrilled enough by the computer to do the work. But be prepared to use some strong-arm tactics. You may want to require users to show you certificates demonstrating their progress, certificates that the program will print out in abundance.

LESLIE EISER

IBM PC, PS/2, and compatibles, with 512K—$49.95 (contains both 5¼- and 3½-inch disks)
Apple II family (128K)—$49.95 (contains either 5¼- or 3½-inch disks)

DAVIDSON & ASSOCIATES
3135 Kashiwa St.
Torrance, CA 90505
(213) 534-2250
(800) 556-6141

PC-WRITE LITE

As major word processors vie for your attention (and your dollars), you're likely at first to find their rich smorgasbord of features deliciously tempting. But as you compare menus, count disks, calculate memory requirements, and attempt to sort out the many features, you're just as likely to develop indigestion.

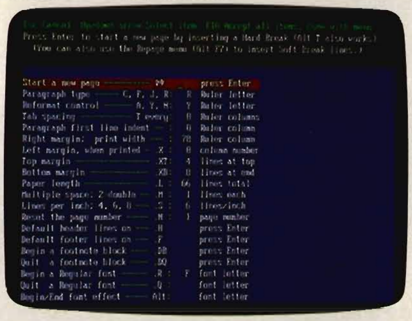
How do you spell relief? How about *L-i-t-e? PC-Write Lite* is a trimmer version of a shareware classic, *PC-Write*. Newcomers to word processing, in particular, will appreciate *Lite's* offerings—plenty to satisfy an appetite for full-featured word processing but without leaving you feeling bloated.

Lite requires 384K of internal memory, only 256K without the spelling checker. And it won't gobble up disk space, as it uses only 150K to 340K, depending on what you install. This might be just the program for your laptop.

Students will appreciate the program's automatic numbering of footnotes and endnotes, as well as its flexible formats for all kinds of writing. Programmers will appreciate the ability to write programs and data files in straight ASCII format. And everyone will like *PC-Write Lite's* speed when loading, saving, and printing files.

Lite's commands aren't as intuitive and easy to learn as the commands of some entry-level word processors I've tried. However, complexity is, to some extent, the price you pay for power and flexibility, and *Lite* has both of these qualities.

Quicksoft has built the program so that you can start easily with basic operations and system defaults, then take advantage of the program's more advanced features as you gain confidence and experience.



```
Press Enter to start a new page by inserting a Hard Break (Alt T also works.)
  (You can also use the Repage menu (Alt F7) to insert Soft Break lines.)

Start a new page ———————— .P?          press Enter
Paragraph type ——— C, F, J, R:     R   Ruler letter
Reformat control ———— A, Y, N:     Y   Ruler letter
Tab spacing ————————— T every:     8   Ruler columns
Paragraph first line indent — :    0   Ruler column
Right margin:  print width —— :   78   Ruler column
Left margin, when printed - .X :   8   column number
Top margin ———————————————— .XT:   4   lines at top
Bottom margin ————————————— .XB:   8   lines at end
Paper length —————————————— .L :  66   lines total
Multiple space: 2 double —— .M :   1   lines each
Lines per inch: 4, 6, 8 ——— .S :   6   lines/inch
Reset the page number ————— .N :   1   page number
Default header lines on ——— .H         press Enter
Default footer lines on ——— .F         press Enter
Begin a footnote block ———— .DB        press Enter
Quit  a footnote block ———— .DQ        press Enter
Begin a Regular font —————— .R :   F   font letter
Quit  a Regular font —————— .Q :       font letter
Begin/End font effect ————— Alt:       font letter
```

***PC-Write Lite* is smaller and faster than many of today's word processors, yet it offers plenty of the features you need.**

Execute most commands with either menus or function keys. You might want to start out using menus and then, with some experience, try the quicker and more direct function keys. *WordStar* veterans will appreciate the ability to use many of that program's touch-type commands. Some dot commands are also available.

Quicksoft also eases your learning experience by providing a quick-reference card, 45 help screens, and optional reminder lines describing command choices. The manual provides a tutorial that covers the program's basics in 24 brief lessons.

In addition, the manual offers detailed discussions of working with files, entering text, traveling in a file, editing blocks and boxes, finding and replacing text, checking your spelling (with the modifiable 50,000-word dictionary), formatting, paragraph layout, page layout, numbering footnotes, printing, and customizing. You'll also appreciate the periodic attention to troubleshooting; the manual does a good job of anticipating problems and questions. It's the clearest and most visually attractive shareware documentation I've seen.

In some respects, the title *Lite* seems a misnomer because the program has so much to offer. You can split the screen and edit or copy between two files, create macros, insert boxes, count words and characters, jump to a specific line or page number, find or strip non-ASCII characters, use decimal tabs and mini rulers, insert headers and footers, customize the screen and the keyboard, chain files together, and set the program to save automatically. There's even a preview mode that you can use if you have a graphics card. Although you can't see individual characters in preview mode, you can see the general layout of the page.

The program gives you access to 10- and 12-pitch typefaces in draft and quality modes, as well as compressed and extra-wide print. Effects include italics, underline, bold, superscript, and subscript. When it comes time to print, you have a variety of options: printing a single page, a whole file, a range of pages, or multiple copies.

What's the difference between *Lite* and full *PC-Write? Lite* is a smaller, simpler version of full *PC-Write*, and it loads faster. On the other hand, if you find that you'd like to try some more advanced word processing, you can trade up to the full version and take advantage of mail merge, multiple columns, proportional fonts, microjustification, automatic creation of indexes and tables of contents, and screen clip (copying a screen to another program). But while registered *Lite* users can trade up at a discount, the $64 upgrade seems a bit steep to me.

If bloated and complex word processors make you lose your appetite, and if you believe that more isn't necessarily better, try a diet of *PC-Write Lite*. Works great. Less filling.

MIKE HUDNALL

IBM PC and compatibles with 384K (256K without spelling checker)—$79 for full registration (disk set, manual, one year of technical support, and quarterly newsletter), $49 for registration that includes just the manual and disks

QUICKSOFT
219 First Ave. N #224
Seattle, WA 98109
(800) 888-8088
(206) 282-0452

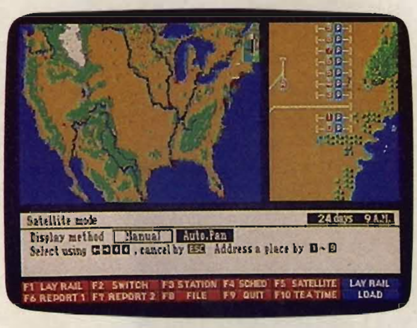
RAILROAD EMPIRE

Trains have long captured the imaginations of Americans, and many an adventure story has been built around the public's romantic fascination with these great iron horses. Now imagine yourself in the shoes of a nineteenth-century tycoon willing to risk your small fortune to link the east and west borders of North America (or Europe) by rail. This is the premise of *Railroad Em-*

pire, a game that draws on your talents as a financial strategist and appeals to this American love for trains.

Building your railroad will take more than money; you'll also need intelligence and very sound strategy because you have only one year to complete the link and allow a special VIP Train to make a safe cross-country journey.

To accomplish your goal, use your fortune to purchase material for necessary construction and cargo trains to transport the material. You also need to consult up-to-the-minute income statements, graphs, and spreadsheets that track your financial position. Most important, though, you have the A Train.



```
Satellite mode                                    24 days  9 A.M.
Display method  Manual  Auto.Pan
Select using ◘◘◘◘ , cancel by ESC  Address a place by 1 ~ 9
```

Test your strategy as you build railroads across continents in *Railroad Empire*.

The A Train is your only means of laying new rails. As you proceed in building your railroad empire, you quickly run out of supplies as well as cash. It doesn't take long to realize that you need to start building some revenue-generating passenger routes. From this point on, the program really gets interesting as you start trying to juggle the schedules and routing of what can eventually turn into a spider web of railroad tracks. Be careful. A train collision will, at a minimum, cost you precious time and money. Wreck the wrong train, and the game is over.

Aside from the financial screens, this entire affair is played on a scrolling topographical map. Mountains, rivers, lakes, population bases, and other terrain are beautifully represented. Items of manipulation (trains, stations, and so forth) are depicted with colorful icons. The graphics of this map game, if you have EGA or VGA, are impressive.

Artdink has created an effective interface, too. You can use commands from pop-up menus or, once you gain some experience, make use of the game's speed-key commands. Be advised, however, to read the manual carefully before you attempt to play the game.

Apparently, a lot of effort went into strategy, the game's most important element; but some of the nuts and bolts of basic rail construction were shortchanged. I spent a lot of time rereading the manual trying to figure out how to close my first loop—not a particularly thrilling way to spend an evening. The instruction book is adequate, but the inclusion of a quick-reference card would have been a real help.

This program goes to great lengths to incorporate many realistic variables and options into the scenario. For instance, you can lay railroad tracks only during daylight hours. Train departures can be made only at reasonable times, and you can set switches at intersections only at night. If you're lucky, population bases will multiply around your train stations, increasing your potential customers for the passenger trains and thus increasing your income.

A clock, indicating current time and number of days spent, is nearly always present onscreen. Another attractive feature is that, in EGA mode, the map changes color to indicate morning, day, afternoon, and night. In CGA, the night view is very pleasant, but morning, day, and afternoon have a washed-out look. It would have worked much better to use the night display to represent the working hours and devise some other scheme for darkness.

At any point during play (except when the game's menus are displayed), you can change the speed of the action. This helps move the game along, but usually you'll want to choose the slowest setting. At the slowest speed, one day equals about four minutes. Running at top acceleration, that same day lasts only about 20 seconds. Pause and save-game features are available at any time. Since you have only one year to complete the link, it's advisable not to let time slip away.

Because you can play on either the American or the European continent, *Railroad Empire* should provide long-term play value. Playing on two different continents presents unique problems and requires different strategies. The manual indicates that additional maps are available directly from the company.

Aside from the benefit of an EGA display, this program makes absolutely no demands for any special equipment. It will run quite well on slow computers, and loading it from floppies is practically effortless. All commands come from the keyboard, so joystick support is neither needed nor provided. You can make a backup copy for safekeeping; however, the program does use a copy-protection scheme that requires you to enter key words located throughout *Railroad Empire*'s manual.

Railroad Empire is not a game for everyone. It requires some serious thought and little eye/hand coordination. I doubt that many children could handle it or would find it interesting. But if you're searching for challenging, absorbing, and well-crafted entertainment, give it a look. If you're ready to test your strategy and business acumen or if you thrill to the call of a distant train, this game puts you on the right track.

WARREN QUINLAN

IBM PC and compatibles with 384K—
$49.95
Additional map disks are available for
Eastern and Western Silkroad (the Orient)
for $19.95 and for Australia or Siberia for
$9.95 each

ARTDINK
Distributed by Seika
20000 Mariner Ave.
Suite 100
Torrance, CA 90503
(213) 373-0404

MAIL TO:

COMPUTE!
SUBSCRIBER SERVICE

P.O. Box 3245, Harlan, IA 51537

Change of Address: Please advise as early as possible. Attach label with your old address and write in new address below.

New Subscriber: Fill in your name and address below. Use separate sheet for gift orders.

PLACE LABEL HERE

Renewal: Attach label.

_____ One year $19.94 _____ Two years $34.95
(Foreign subscribers please add $6.00 per year for postage)

NAME ______________________

STREET ______________________

CITY/STATE/ZIP ______________________

_____ Please bill me _____ Payment enclosed

For other subscription questions or problems, please write a note and send entire form to the above address. OR CALL TOLL-FREE:

1-(800) 727-6937

COMPUTE!'s HOME OFFICE DIRECT

YOU WANT TO BE YOUR OWN BOSS.

YOU WANT TO GIVE UP THE 9 TO 5.

COMPUTE! CAN HELP YOU, WITH

PRODUCTS AND STRATEGIES

DESIGNED TO WORK

WHERE YOU WORK.

AT HOME. ▷ ▷ ▷ ▷ ▷

PRODUCT LINES

EACH HOME OFFICE HAS DISTINCT NEEDS. MANUFACTURERS PRODUCE DIFFERENT PRODUCTS. GET CONNECTED WITH "PRODUCT LINES," A SELECTIVE LOOK AT A SINGLE VENDOR'S WARES.

FUJITSU'S PRINTER LINE

AFFORDABLE POSTSCRIPT

For the home office professional who's looking for a top-of-the line laser printer at an affordable price, the Fujitsu RX7100PS Page Printer offers an array of attractive features to cover almost any application. The combination of Hewlett-Packard LaserJet II emulation and PostScript compatibility opens entire avenues of home office production.

The printer comes standard with 2 megabytes of RAM (expandable to 4 megabytes for an additional $1,000) and 1.5 megabytes of ROM. PostScript emulation makes available 35 fonts; LaserJet emulation consists of the standard Courier and line-printer modes that can be printed either in portrait or landscape mode. Additional font cards are available from Fujitsu, and downloadable fonts from third-party vendors are also supported.

Although rated at 5 pages per minute, I was able to print a 170-page document in a PostScript-supported font (Palatino) at 8 pages per minute. Printing is clear and attractive at 300-dots-per-inch resolution.

Sizing up at 16 × 15.7 × 6.7 inches, this 43-pound printer will require its own table if you've got an average-size desk at home. One automatic sheet-feeder bin carries 150 sheets of 20-pound bond. Feeding is for the most part smooth, although jams can occur if the paper is not carefully loaded and aligned in the bins. A second sheet feeder is optional, and manual feeding is allowed.

The RX7100PS makes operation easy by means of a front-panel menu from which you can select everything from bin and paper size to PostScript or software emulation modes. A 16-character display alerts you to errors, jams, and an empty sheet feeder. The display is extremely handy in leading you through the emulation selection process; so helpful, in fact, that it's tempting not to look at the documentation.

RX7100PS Page Printer

That would be a mistake, because the concise manual offers clear guidelines to operating the printer, from setup and installation to error handling and emulation. If you're new to laser printers, this model and its documentation will ease your entry.

With a suggested retail price of just under $4,000, the RX7100PS is quite competitive with other PostScript printers. If you're running a home office or small business and you need faultless PostScript and LaserJet emulation, or if your business uses both PCs and Macs (the RX7100PS can run off an AppleTalk network as well as through its standard PC serial and parallel interfaces), this member of the Fujitsu line will serve you well.

PETER SCISCO

Fujitsu RX7100PS Page Printer

Price: $4,495
Emulation: HP LaserJet II and PostScript
Memory: 2 megabytes of RAM, 1.5 megabytes of ROM
Speed: 5 pages per minute
Features: One 150-sheet feeder bin, front-panel menu, font cards and soft fonts supported

HEAVY DUTY

The RX7200 is Fujitsu's laser workhorse, a 12-pages-per-minute behemoth that weighs in at 77 pounds. Get a big scale if you're going to weigh the printer—it's nearly 17 inches wide, almost 23 inches deep. This one definitely requires its own table.

The printer should probably have its own room as well: Its fan runs constantly and is noisy. I've gotten in the habit of switching the printer off between sessions; I wish the machine had an Idle mode that would switch off the fan when the printer isn't in use.

That's my only wish, though; Fujitsu has nicely filled the rest of my wants. The RX7200 is an ideal high-volume text printer. (The printer can handle graphics, too, and does them well, but it seems primarily designed for text-intensive situations.) Its 330 × 300 dots-per-inch resolution gives plenty of crispness to text, although it's less effective with small type such as graphics labels.

I like the machine's twin paper supply. (The second bin is optional.) Positioned in the front of the machine, the bins are spacious enough to accommodate a quarter of a ream of standard copy paper, letting me leave the printer on automatic when printing out a draft of a book or multiple copies of long memos. The paper emerges from the top of the machine, stacked face-down, giving me my materials in the order I need them. A manual paper feeder gives you the capability of printing everything from postcards to transparencies.

RX7200 Page Printer

The RX7200 comes with 640K of RAM, which can be expanded to 4.6 megabytes. Resident fonts include Courier, Prestige Elite, and Times Roman; three IC card slots are available for additional fonts or emulation cards. Resident emulations include HP LaserJet Plus, Diablo 630, and IBM Proprinter. Front-panel controls are compact yet sensibly designed, with a readable LCD panel to inform you of printer status.

I've worked the RX7200 hard over the past few months and have grown quite attached to it. I like being able to put together hundreds of printed pages in less than an hour. Obviously, with its size and capacity, the RX7200 is more printer than the average individual would need in a home office.

But if you are running a business that has heavy text-printing demands or are sharing considerable printing duties among several users, the RX7200's $3,995 price may make this the printer you need.

KEITH FERRELL

Fujitsu RX7200
Page Printer

Price: $3,995
Emulation: HP LaserJet Plus, Diablo 630, Epson FX-85, IBM Proprinter
Memory: 640K of RAM, upgradable to 4.6MB
Speed: 12 pages per minute
Features: 250-page paper bins (second bin optional), front-panel menu, IC slots for additional fonts

COMPACT LASER

A stripped-down version of the PostScript model reviewed above, the RX7100 Page Printer prints up to five pages of text a minute, and, because of its small footprint, it's ideal for users with limited desk space. Setup and connection is simple and explained thoroughly in the manual. Both parallel and serial interface connectors are provided.

Three resident fonts are available including Courier in both landscape and portrait orientations and Line Printer in portrait orientation. There are also three additional slots for optional plug-in cards, and the printer supports downloadable fonts.

RX7100 Page Printer

The printer's control panel, conveniently located on the front, has a 16-character display that advises you of printer status and swiftly guides you through your selection of fonts, page layout, and other options.

The printer accepts plain, bond, and printed paper; overhead transparencies; labels; and envelopes. The removable paper bins (one is standard) have a capacity of 150 sheets each. A manual-feed slot is also provided. The printer's output is consistent except when the paper has a raised surface, for ink may not distribute evenly over it. The print density can be adjusted with a dial located on the front panel of the printer.

With a price of only $1,495, the RX7100 performs like a laser printer retailing for much more. The current decline in laser printer prices bears additional benefits: We've seen the RX7100 on the retail streets for less than $900. Now, that's a bargain!

MICKEY McLEAN

Fujitsu RX7100
Page Printer

Price: $1,495
Emulation: HP LaserJet Plus, Diablo 630, IBM Proprinter; Epson FX-85 (optional)
Memory: 640K of RAM, expandable to 4.6ME
Speed: 5 pages per minute
Features: 1 standard paper bin (1 optional), loads up to 150 sheets of 20-pound paper

QUALITY WITH 24

To get your hands on a reliable 24-pin that can quickly turn out professional-looking documents, hurry over to your nearest computer store and check out the Fujitsu DL 3300. This workhorse can print up to 240 characters per second with its bidirectional printing and produce high-quality printouts with as many as 360 × 180 dots per inch.

You can easily switch between letter and draft mode at the press of a button, or have your text printed in attention-grabbing variations such as double wide, double high, bold, compressed, or italic. If you need additional fonts, they can be easily downloaded or installed via optional font cards.

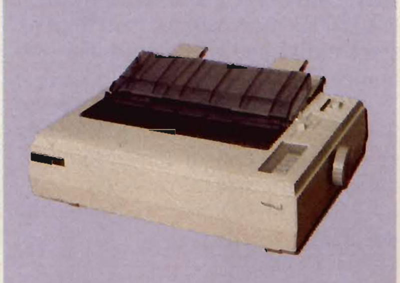
For printing continuous-feed paper, the DL 3300's tractor-feed operation provides for page after page of trouble-free operation. If you want to print on single sheets, a handy paper-parking feature makes switching between the two a snap. There's no need to remove the continuous-feed paper when you want to print on letterhead. And its automatic paper-loading feature is a real timesaver.

If your printing requirements call for variable character spacing, variable line spacing, or foreign-language fonts, these handy options are accessible from four soft-touch buttons on the DL 3300's control panel. A wide range of user-defined printing options are available from the front panel, avoiding the use of awkward DIP switches. Fujitsu also offers an optional color printing feature.

You can use either a serial or a parallel interface between the printer and your computer. And if your commercial software requires a certain printer emulation, you have a choice of eight different ones with the DL 3300. If you use a variety of software, you may want to select either the FX-80 or IBM emulations, as these printers are supported by most software programs.

For business correspondence, graphics, or quick printing jobs around the home, the Fujitsu DL 3300 is an outstanding choice. Its type is crisp, dark, and clear—and for a dot-matrix printer, the DL 3300 is surprisingly quiet. You may not use all the features packed into this printer every day, but it's nice to know they're there.

TOM NETSEL ▣



DL 3300 24-Wire Dot-Matrix Printer

Fujitsu DL 3300

Price: $795

Emulation: IBM Graphics Printer, IBM Proprinter XL; Diablo 630 API, Fujitsu DPL24C, Epson FX-80

Speed: 288 cps (high-speed draft); 216 cps (draft); 72 cps (letter-quality); speeds based on 12 characters per inch

Features: single-sheet insertion without removing forms; makes up to three impact (carbon) copies (including original)

COMING IN JULY

We look at
Packard Bell's
home office products.

This is as low as fax gets: $195

$195 9600-bps fax board for your PC! Wow!

You want to get faxing, right? Well, you've come to the right ad. If you've got a PC with an empty half slot, you'll want to pick up the phone right now and get your order in for the new **Frecom FAX96**. It's only $195 plus tax and shipping, but supplies are limited and you'll want to act fast.

The Frecom FAX96 gives you high speed 9600 bps performance and is fully compatible with all standalone Group III fax machines. It's new, and cuts no corners. It will even receive faxes without interrupting you while you're working on your PC. Of course, at that price you don't get a voice answering machine or built-in modem or gloriously complicated menus.

What you do get is a way to send a fax whenever you need to get a message out in a hurry and don't want to go stand in line at the nearest fax machine. With your own FAX96 board, you have total control. And you get to see incoming faxes on your monitor before you print (or junk) them.

The Frecom FAX96 has automatic redial, in case the fax you're calling is busy. Your $195 purchase also includes very simple "push-the-button" software that lives up to Fremont Communications' **instant ON** philosophy. Installation is a snap; our installation software guides you through the few simple setup choices without the befuddlements of communications jargon. So to start faxing from your PC, just call, have your VISA or MasterCard ready, and we'll ship you a Frecom FAX96 complete with a 100% money-back guarantee. For $195! That's as low as fax gets.

Order phone: **415-438-5000**
Dealer inquiries 415-438-5016
FAX: 415-490-2315

FRECOM

Fremont Communications Company
46309 Warm Springs Blvd.
Fremont, CA 94539

Circle Reader Service Number 185

"A little board. A lot of technology. And a low price direct to you. Money-back guarantee. Give it a shot!"

Paul Masters, UC Berkeley MBA and Northern Telcom alum, is President of Fremont Communications

FOR ORDERS AND INFORMATION IN USA & CANADA CALL **1-800-759-6565**

Order Hours: Mon-Thurs, 9am-7pm / Fri, 9am-6pm / Sat-Closed / Sun, 9:30am-6pm (ET)

WE CAN RECONFIGURE ANY OF OUR COMPUTER SYSTEMS TO YOUR SPECIFICATIONS. ALL SYSTEMS SUPPORT MGA, CGA, VGA, MULTISCAN. ALL SYSTEMS AVAILABLE WITH 20, 30, 40, 60, 80, 100 MB HARD DRIVES. WE CARRY MODEMS, DRIVES, CARDS, MONITORS, MEMORY UPGRADES AND ALL OTHER ACCESSORIES FOR YOUR COMPUTER. CALL FOR INFORMATION.

MONTGOMERY GRANT

OUTSIDE USA & CANADA CALL **(718)692-0790**

OR WRITE TO:
MONTGOMERY GRANT: MAIL ORDER DEPARTMENT
P.O. BOX 58 BROOKLYN, NY, 11230
FAX #7186923372 / TELEX 422132 MGRANT

RETAIL OUTLET
PENN STATION, MAIN CONCOURSE
(Beneath Madison Sq. Garden) NYC NY 10001

Store Hrs: MON-THURS, 9-7:30/FRI, 9-6/SAT-CLOSED/SUN, 9:30-7

ESTABLISHED 1967
23 YEARS OF EXPERIENCE

commodore

C= 64C $119.95
INCLUDES: 1 JOYSTICK (A $19.95 VALUE)

C= 128 D $369.95
C-128D with Built-in Disk Drive Includes 2 FREE Games (a $39.95 Value)

COMMODORE C 64-C COLOR PACKAGE

- C/64-C with Excelerator Plus FSD-2 Disk Drive
- 1 Joystick

$239

COMMODORE C 64-C COMPLETE PACKAGE

- Commodore C-64/C Computer
- Commodore 1541 Disk Drive
- Commodore Color Printer
- 12" Monitor
- Box of 10 Diskettes - 1 Joystick

$289

COMMODORE C 64-C COLOR PACKAGE

- Commodore C-64/C Computer
- Commodore 1541 Disk Drive
- Commodore Color Printer
- Color Monitor
- Box of 10 Diskettes - 1 Joystick

$339

Excellerator
PLUS FSD-2 DISK DRIVE
$129.95

1571 Disk Drive
CALL

1581 Disk Drive
$199.95

1541II Disk Drive
Includes FREE Game (A $19.95 Value)
$159.95

Magnavox 13" Color Composite Monitor
$174.95

Magnavox 13" RGB Composite Color Monitor
IN STOCK

1084 Monitor
$279.95

1802 Monitor
$189.95

MPS-1230 Printer
$189.95

COMMODORE 128D COMPLETE PACKAGE

- Commodore C/128-D Computer with Built-in Disk Drive
- Commodore Color Printer
- 12" Monitor

$429

COMMODORE 128D DELUXE PACKAGE

- Commodore C/128-D Computer with Built-in Disk Drive
- Magnavox 13" RGB Color Monitor
- Commodore Color Printer

$599

xetec

XETEC Lt. Kernal 20MB Drives for:

C-64/C	$729
C-128D	$849

XETEC 40MB Hard Drive for:

C-64C, & C-128/D	$1199
128	$999

WE CAN RECONFIGURE ANY COMMODORE PACKAGE TO FIT YOUR NEEDS!

COMMODORE PERIPHERALS

1700 RAM Expansion	$119.95
1764 Expansion Module	$129.95
CARDCOG-WIZ Interface	$49.95
C-64/C -64C Power Supply	$29.95
C-1670 Modem	$79.95
Commodore 1350 Mouse	$26.95
Commodore 1351 Mouse	$49.95
XETEC S. Graphix Jr. Interface	$29.95
XETEC S. Graphix Sr.	$49.95
XETEC Supergraphix Gold	$74.95

PRINTER SPECIALS

STAR PRINTERS

NX-1000II	Call
XB-2410	Call
NX-1000C	Call
XB-2415	Call
NX-1000 Rainbow	Call
NX-1000C Rainbow	Call
Color Option Kit for XR, XB Printers	Call

OKIDATA PRINTERS

Okimate 20	Call
380	Call
320	Call

HEWLETT-PACKARD

Deskjet	Call
Laserjet IIP	Call
Deskjet+	Call
Laserjet IIID	Call

CITIZEN PRINTERS

GSX 140	Call
Color Option Kit	Call

NEC PRINTERS

P2200XE	Call

CANON

BJ-130E	Call

PANASONIC PRINTERS

KXP-1180	Call
KXP-1191	Call
KXP-1124	Call

EPSON PRINTERS

LX-810	Call
LQ-510	Call
FX-850	Call

ALL OTHER MODELS IN STOCK / ALL MODELS DISCOUNTED

COMMODORE PC40 III
IBM AT COMPATIBLE

- 80286/12MHz. - 1MB RAM - 40MB Hard Drive - 1.2MB Floppy Drive - Video Graphics Card - MS DOS 3.3 - GW Basic - 12" Monitor

$1269

BLUE CHIP 286
IBM AT COMPATIBLE

- 80286 Microprocessor - 1.2MB Floppy Drive - EGA/CGA/MGA Graphics - Serial/Parallel Ports - MS DOS - GW Basic

$569

MONITORS

SAMTRON 452 CGA	$169.95
Blue Chip EGA	$249.95
Blue Chip EGA Monitor & EGA Card	$349.95
Magnavox VGA	$329.95
Magnavox VGA Monitor & VGA Card	$458.95

EPSON
EPSON EQUITY I+
IBM XT COMPATIBLE PACKAGE

- 640K RAM - 4.77-10MHz - One 360K Drive - Serial & Parallel Ports - 12" Monitor - Box of 10 Diskettes - MS DOS 3.3 - GW Basic - Wordprocessing, Database & Spreadsheet Software

$479

EPSON
EPSON EQUITY II+
IBM AT COMPATIBLE

- 640K RAM - 12MHz - 80286 Microprocessor - 1.2MB Floppy Drive - 12" Monitor - MS DOS 3.3 & GW Basic - Wordprocessing, Database & Spreadsheet Software

$759

AMIGA

500
$519

AMIGA 500 w/RGB COLOR MONITOR $719

AMIGA 500 With 1084	$789

AMIGA 2000 $1269

AMIGA 2000 w/1084 Monitor	$1539
AMIGA 2000 w/40MB H.D.	$1759

AMIGA 2000 H.D.	*$1879*
AMIGA 2500/30	*$3229*
AMIGA 1010 Disk Drive	$129
A-2088D Bridge Card	$489
A-2286D Bridge Board	$1079
A-501 Memory Expansion	$149

ALL OTHER AMIGA PERIPHERALS & HARD DRIVES IN STOCK

IBM® AT

- 512K RAM expandable to 8MB
- 1.2 MB Floppy Drive
- Wordprocessing, Database & Spreadsheet Softwer - 12" Monitor

$899

HARD DRIVES

ST225 (20 MB)	$219
ST 225 (20 MB) With CONTROLLER	$239
ST238 (30 MB)	$239
ST 238 (30 MB) With CONTROLLER	$269
ST 251-1 (40 MB)	$319
ST 277R (60 MB)	$369
ST4096 (80 MB)	$549

FOR CUSTOMER SERVICE CALL: (718)692-1148

CUSTOMER SERVICE HOURS: MON-THURS 9:00am-5:00pm FRI 9:00am-4:30pm

NO SURCHARGE FOR CREDIT CARD ORDERS

WE INVITE CORPORATE AND EDUCATIONAL CUSTOMERS. DISCOUNTS FOR QUANTITY ORDERS / RUSH SERVICE AVAILABLE

TOLL FREE TECHNICAL SUPPORT

Certified check, Bank Check Money Orders, Approved P.O.s, Visa, Mastercard, Amex, Optima, Diners Club, Carte-Blanche, COD's & Wire Transfers accepted. Please call before submitting P.O.s. Non-certified checks must wait 4-6 weeks for clearance. Prices and availability subject to change without notice. Not responsible for typographic errors. Return of defective merchandise must have prior return authorization number or returns will not be accepted. IBM XT AT are registered trademarks of International Business Machine Corp. Please add 5% shipping and handling. Orders over $1200 are discounted to 3% shipping & handling (Orders over $3000 2%). Canadian orders please call for shipping rates. APO FPO orders please add 10% shipping & handling. All APO FPO orders are shipped first class priority air. All orders can be shipped air express, call for details DCA #800233

IF YOU DON'T SEE WHAT YOU WANT-ASK FOR IT. WE CARRY ALL MAJOR BRAND COMPUTERS & PERIPHERALS
WE WILL TRY TO BEAT ANY ADVERTISED PRICE IN THIS MAGAZINE

PETER SCISCO

BOTTOM LINES

THE FAXES keep rolling in—it seems no home office is complete without one of these ubiquitous machines. And for good reason. Faster and cheaper than overnight delivery services, a fax machine can get your important correspondence to the right person at the right time.

In the race to fill this growing market, **Dataquest,** a market research firm based in San Jose, California, named **Sharp Electronics** as the number 1 seller of fax machines in the United States for the third year in a row. Sharp, headquartered in Mahwah, New Jersey, sold 350,000 units last year—good for 21½ percent of the market.

Sharp will try to meet the demands of the plain-paper fax market with its new FO-5200 model, which incorporates laser technology. **Hewlett-Packard** has revamped its own lasers with its introduction of the **LaserJet III,** an eight-pages-per-minute printer that retails for $2,395. This successor to the venerable LaserJet II uses the company's Resolution Enhancement technology for improved print quality and claims to offer faster graphics printing—a welcome feature for home office users who have fallen asleep waiting for graphics to print from the LaserJet II.

Hewlett-Packard also said it will release **Macintosh versions** of the LaserJet III, IID, and IIP printers sometime in the second quarter of 1990. The firm will continue to take orders for the LaserJet II through September 1990.

No matter what kind of computer you own, if you want to make money with it at home, **The American Institute of Computer Technology** has published a short, informative book by John R. Mortz called ***Make Money Moonlighting.***

According to the U.S. Department of Labor, Mortz says, 20 percent of American workers earn money moonlighting, and those who use a computer earn the best wages. The author goes on to proclaim that the **best 11 areas** for earning money with your computer are word processing, desktop publishing, shareware development, computer consulting, computer training, computer repair, computer services broker, computer seminars, bulletin board systems, computer equipment rentals, and employment agencies. For more information about this book, write the Institute at 30 North Raymond Avenue, Suite 714, P.O. Box 2615, Pasadena, California 91102-2615, or call (818) 793-8429.

A few other "bests" were named recently at the Software Publishers Association **Excellence in Software Awards,** held March 27 in San Diego, California. Named as Best Personal Productivity/Creativity program, Intuit's ***Quicken* 3.0** furthered its excellent reputation. The award for Best Business Application: Numeric or Data Orientation went to Borland International's ***Quattro Pro,*** while Hewlett-Packard's graphical operating environment, ***NewWave,*** took the Best Business Application: Graphic or Display Orientation honor.

The LaserJet III offers improved print quality and speed at a lower price.

If you've already set up your home office, you may be missing the camaraderie that comes with working the old 9 to 5. Well, **stop fretting** because you can choose from two organizations designed for home-based entrepreneurs: the American Home Business Association (397 Post Road, Darien, Connecticut 06820) and the National Association for the Cottage Industry (P.O. Box 14850, Chicago, Illinois 60614). So pick up a pencil and **join the club.**

On the subject of sharing, how would you like to link a couple of PCs within a network for less than $100? Networks don't immediately leap to mind when you think of a home office. But if you're one of those people out there who has bought an upgraded PC and is wondering what you'll do with your old one, here's an answer.

The Access Easy Network gives you everything you need to make information and peripherals (like a laser printer) available to a second PC. The two computers can be up to 20 feet apart (optional cables can increase the distance to 200 feet). Simply install the two networking cards (one in each computer) and the software, then run the cable, and—*bang!*—you're off and running. **No more sneakernet.**

For information, contact Exzel, 7721 East Gray Road, Suite 102, Scottsdale, Arizona 85260; (800) 991-9775.

You can share more than a printer if you **log on** to the Home Office/Small Business Roundtable on the GEnie online information service. Topics ranging from tax advice to setting fees are discussed in free-ranging electronic conversations that make you feel like part of a larger group—and you should. The U.S Chamber of Commerce counts **more than 10 million businesses** that list a home address with the IRS.

If you have your own **information to share** with *COMPUTE!*'s Home Office Direct readers, I'd like to hear from you. Drop a line to COMPUTE! Feedback—Home Office Direct, P.O. Box 5406, Greensboro, North Carolina 27403. ◘

LOWEST PRICES! FAST DELIVERY!

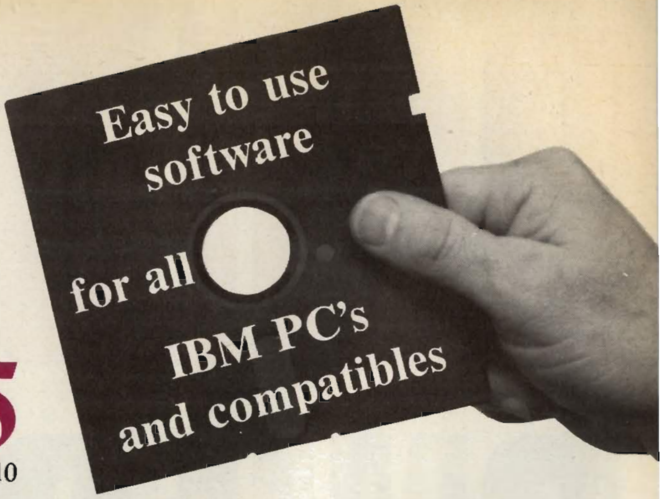
Guaranteed

$1.75 or

per disk 10 or more

$2.25

per disk less than 10



Unconditional money-back guarantee! ■ Free catalog of over 200 programs with every order or by request ■ All orders shipped same day ■ Airborne Express overnight service only $6.00

THIS MONTH'S SPECIALS

- ☐ **Am-Tax, 1989 Tax Year (3989)**—Prepare your 1989 tax returns easily and quickly. 1040 and all schedules A-SE.
- ☐ **Personal Budget Tools (3987)**—Great way to plan your household budget. Powerful and easy to use.

BUSINESS/HOME

- ☐ **Express Check 3.07 (1117)**—A great program to manage your checking accounts! Even prints checks!
- ☐ **Home Inventory 3.4 (3137)**—Helps you keep track of everything you own. Great for insurance.
- ☐ **Painless Accounting 4.0 (3 disks) (1120)**—Easy to use and loaded with features. General Ledger, Accounts Receivable/Payable, invoicing, check printing and more. (HD)

DATABASE/SPREADSHEET/ WORD PROCESSING

- ☐ **PC-Calc+ (3 disks) (3410)**—A very powerful spreadsheet.
- ☐ **PC-File:dB (3 disks) (1330)**—An excellent dBase compatible data base program. Very powerful! (HD)
- ☐ **PC-Stylist 1.2 (3917)**—Improve your writing style.
- ☐ **PC-Write 3.02 (3 disks) (3820)**—One of the best word processors available anywhere. Easy to use and loaded with features including spell checker.

EDUCATION

- ☐ **Amy's First Primer (1717)**—Six different learning programs for children ages 4-8. (CGA)
- ☐ **Computer/DOS Tutor 4.4 (1415)**—Learn how to use your computer and DOS easily with this educational program. A must for anybody trying to learn about computers!
- ☐ **The DOS Learning System (1417)**—Learn how to use DOS with this great tutorial. All versions of DOS 2.0-3.3.
- ☐ **Funnels and Buckets (1727)**—A fun way to teach children basic math skills! (CGA)
- ☐ **Lotus Learning System (2 disks) (1420)**—Learn Lotus 2.0 easily and quickly.
- ☐ **Play 'n' Learn 2.03 (1735)**—A collection of six programs for children 18 months to 4 years. (CGA)
- ☐ **Typing Teacher (1425)**—This disk contains 3 program designed to improve the speed and accuracy of your typing!
- ☐ **World 2.93 (1849)**—The ultimate globe! Learn about cities, countries with this computerized globe. (CGA)

GAMES

- ☐ **Arcade Games 1 (1811)**—Pac-man (3 versions!), Hopper, Space Invaders, Janitor Joe and others. (CGA)
- ☐ **Arcade Games 2 (1812)**—Q-Bert, Donkey Kong, Breakout, Beast and others. (CGA)
- ☐ **Arcade Games 3 (1813)**—Striker, Space War & more. (CGA)
- ☐ **Ed's Chess (2425)**—The best chess game available anywhere. (It beat Chessmaster 2000)
- ☐ **EGA Cunning Football 2.3 (1927)**—The best football simulation anywhere. EGA or VGA Graphics required.
- ☐ **EGA Games 1 (1911)**—A collection of the best EGA games including EGAroids, Reflex, Aldo, Flees and others. EGA or VGA Graphics required.
- ☐ **Graphic-Less Games (2111)**—A collection of games that don't require color or graphics. (Will work on ANY system!)
- ☐ **Great Adventures 1 (2531)**—Five exciting games.
- ☐ **Kids' Games (2317)**—Fun for the under-12 set.
- ☐ **Master the Market (2435)**—3 great stock market simulators!
- ☐ **Mind Puzzles (2439)**—3 programs that challenge the mind! (CGA)
- ☐ **Miramar Flight Simulator (2319)**—Go to Top Gun flight school and pilot an F-18 into combat. (CGA)
- ☐ **Monopoly (2445)**—A great rendition of the classic game. Great color and sound! (CGA)
- ☐ **PC-Pro-Golf 4.2 (2327)**—Tee it up, and play 18 holes! (CGA)
- ☐ **Pinball 1 (1821)**—Five great pinball games. (CGA)
- ☐ **Strategy Games (2461)**—Risk, Othello, Chess, Nyet (Tetris clone), and others. (CGA)
- ☐ **Star Trek Games (2341)**—Three games: an arcade game, standard Star Trek game, and a trivia game.

MISCELLANEOUS

- ☐ **Banner & Sign Makers (3215)**—Make banners or signs for any occasion. Works with any printer.
- ☐ **Brother's Keeper 4.3 (2 disks) (3120)**—Excellent, full-featured genealogy program that's easy to use.
- ☐ **Calendar Maker (3129)**—Create calendars for any month or year.
- ☐ **Formgen 3.31 (3227)**—A very versatile form generator. Make any kind of form for business or home on any printer!
- ☐ **Kwikstat 2.0 (2 disks) (3130)**—A complete, easy-to-use statistics package.
- ☐ **PC-Key-Draw 3.65 (4 disks) (2780)**—An exceptionally powerful graphics program. Comes with a large collection of ready-made graphics. (CGA) (HD)
- ☐ **Pianoman 4.0 (3147)**—Create and play music on your PC! Lots of fun!
- ☐ **SpeedRead (1845)**—Learn to speed read!
- ☐ **Willkit (3157)**—Prepare a will that is valid in all 50 states.

UTILITIES

- ☐ **Automenu 4.5 (3515)**—Latest version of the most popular menuing program of all time!
- ☐ **Backup Whiz 2.1 (3517)**—Back up your hard disk quickly and safely with this easy-to-use program.
- ☐ **Best DOS Utilities (3525)**—Essential utilities for DOS. File finders, listers and numerous other handy utilities that will save you time. Very easy to use!
- ☐ **Epson Utilities (2 disks) (3210)**—A collection of utilities for Epson and Epson-compatible printers.
- ☐ **Mr. Label 4.1 (3235)**—Powerful & versatile label maker.
- ☐ **PC-Deskteam 2.01 (3549)**—A Sidekick-like program with even more features!
- ☐ **Professional Master Key (3555)**—A collection of utilities like Norton's. Recover erased files easily!
- ☐ **Vaccines and Virus Killers (3627)**—A collection of utilities designed to protect your system from viruses! This disk includes Flu-Shot+ 1.52.

WORDPERFECT 5.0

- ☐ **PC-Draft II (2 disks) (3760)**—Create clip art graphic files (in .WPG format) for WP 5.0. Includes dozens of images to help get you started. (CGA) (HD)
- ☐ **WordPerfect 5.0 Art/Graphics (2 disks) (3710)**—Dozens of clipart images and clip art viewer.
- ☐ **WordPerfect 5.0 Learning System (2 disks) (3730)**—Learn WP 5.0 easily and quickly with this great tutorial (WP 5.0 is NOT required).
- ☐ **WordPerfect 5.0 Macros (2 disks) (3720)**—Hundreds of helpful macros for WP 5.0.
- ☐ **WordPerfect 5.0 Menu/Mice (2 disks) (3740)**—Menu systems, mouse drivers.
- ☐ **WordPerfect 5.0 Tools (2 disks) (3750)**—A collection of 17+ utilities for WP 5.0.

(CGA) Requires Color Graphic Adapter (HD) Requires Hard Disk

Some of the programs we sell are "shareware." Shareware programs are copyrighted and require additional payment to the authors if found useful.

Order Toll Free
1-800-876-3475

Information: 503-776-5777
Fax: 503-773-7803

Name ____________________

Business/Company (if applicable) ____________________

Address ____________________

City/State/Zip ____________________

Phone ____________________

Disk size: ☐ 5¼" ☐ 3½" (add $1 per disk if you require 3½")

No. Disks________ ×$________ =$________

U.S. Only
☐ Shipping $ $3.00
☐ Airborne Express, Overnight (add $6) $________
☐ UPS 2nd Day Air (add $4) $________
☐ COD (add $4) $________

☐ Foreign (add $4) $________

TOTAL ORDER: $________

Method of Payment: ☐ Check/Money Order ☐ Visa/MasterCard ☐ COD

All checks must be payable in US funds. We cannot accept Eurochecks.

Card No. ________ Exp. Date ________ Signature ________

Rx Reasonable Solutions

2101 West Main, Medford, Oregon 97501

VISA MasterCard

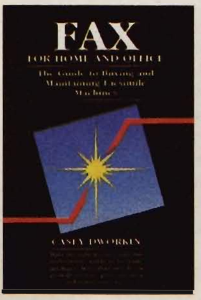
CMP6/90

Circle Reader Service Number 189

BUILD YOUR OFFICE WITH COMPUTERS

BUILD YOUR BUSINESS WITH COMPUTE!

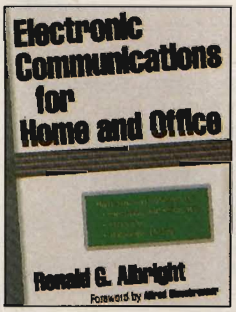
Start building with this collection of books that deliver the same quality and dependability you find in *COMPUTE!*



Fax for Home and Office: The Guide to Buying and Maintaining Facsimile Machines

by Casey Dworkin
$12.95

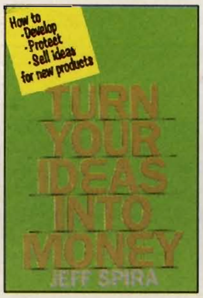
This easy-to-use guide is geared toward first-time buyers of a fax machine who typically purchase the fax for a home office or small- to medium-sized business. 128pp.


Electronic Communications for Home and Office
Ronald G. Albright
Foreword by Alfred Glossbrenner

Electronic Communications for Home and Office

by Ronald G. Albright
Foreword by Alfred Glossbrenner
$16.95

The first source book which shows how home businesses and small companies can use voice mail, fax, databases, electronic mailboxes, and other electronic innovations to enhance productivity. 270pp.



Turn Your Ideas into Money

by Jeff Spira
$12.95

This step-by-step guide tells you how to sell your ideas as developed products without lengthy patent searches and expensive lawyers. A successful developer of new products, Spira explodes some commonly held myths about patent protection and explains the steps through which all successful new-product development must proceed. 160pp.

Maintaining, Upgrading and Troubleshooting IBM PCs, Compatibles, and PS/2 Personal Computers

by Mark Minasi
$18.95

For users of IBM PCs, compatibles, and PS/2 computers, this resource explains how to avoid costly repairs, perform minor repairs, install peripherals, and really get to know your personal computer. Tested by hundreds of hours of rigorous classroom use, this book is the maintenance and repair manual every computer user needs. 320pp.

Your Home Business Can Make Dollars and Sense

by Jo Frohbieter-Mueller
Foreword by Dr. Dale Jon Hockstra
$16.95

Written for the beginner, this book leads you through the steps of setting up a business at home, investigating zoning and financing, basic business procedures, and even how to take advantage of tax breaks for home business owners. It includes extensive references and a list of over 200 occupations suitable for at-home work. 256pp.

Order these top titles from COMPUTE!'s Bookshelf and start building your business. Mail the order form to the right to COMPUTE!'s Bookshelf, P.O. Box 5188, Greensboro, North Carolina 27403.

Please send me the titles checked below. I've enclosed $2.00 shipping and handling per book and sales tax* where applicable.

- ☐ **Electronic Communications for Home and Office (7993) $16.95**
- ☐ **Fax for Home and Office: The Guide to Buying and Maintaining Facsimile Machines (7990) $12.95**
- ☐ **Maintaining, Upgrading and Troubleshooting IBM PCs, Compatibles, and PS/2 Personal Computers (2303) $18.95**
- ☐ **Turn Your Ideas into Money (8008) $12.95**
- ☐ **Your Home Business Can Make Dollars and Sense (7995) $16.95**

_______ **Subtotal**
_______ ***Sales tax (NC, NY, and PA residents please add appropriate sales tax)**
_______ **Shipping and handling ($2.00 per book)**
_______ **Total enclosed**

☐ **Check or money order** ☐ **MasterCard** ☐ **VISA**

Signature ____________________ (Required for Credit Card Orders)
Acct. No. ____________________ **Exp. Date** ________
Name ____________________
Street Address ____________________ (No P.O. Boxes, Please)
City ____________________
State ____________________ **ZIP** ________
Daytime Phone No. ____________________

Mail to
COMPUTE!'s Bookshelf
P.O. Box 5188
Greensboro, NC 27403

NC, NY, and PA residents please add appropriate sales tax. All orders must be paid in U.S. funds drawn on a U.S. bank. Orders will be shipped via UPS Ground Service. Please allow 4–6 weeks for delivery.

CONVERSATIONS

KEITH FERRELL

The year's most compelling computer buzzword—*multimedia*—has hardware and software companies scrambling to find applications, develop products, generate excitement, and even define the term. No company is more engaged in these activities than IBM. And few people are more involved than IBM's Peter Blakeney, manager of Market Support—MultiMedia Solutions.

"Our definition of multimedia is the incorporation of still image, sound, motion video, graphics and animation, and touch into a personal or desktop system," Blakeney says.

"There is a broader definition [of touch]," Blakeney says, "which encompasses new input mechanisms other than a keyboard. It might be a stylus on a pad or gestures that modify action on the screen, as well as spoken voice. In general, *touch* means new methods of interacting with the computer."

Blakeney sees several areas ripe for multimedia impact."One [area] is training," he says. "There is an enormous requirement across the world to retrain the work force. The training ranges all the way from basic skills and remediation, for workers who are not getting an appropriate education coming out of the K–12 environment, to [training for] those who are being retrained for new skills and also [for] management employees."

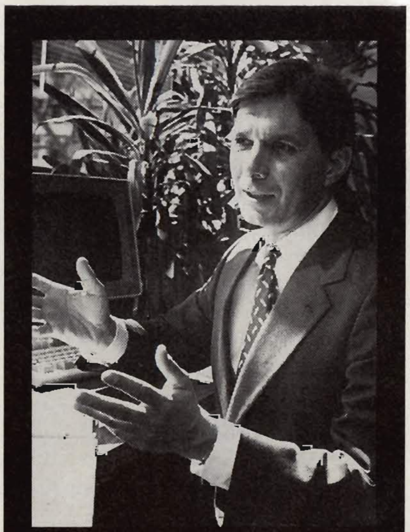
"The second area," Blakeney says, "is the educational institutions themselves, K–12 and higher. Here, multimedia uses the techniques of motion video and sound to enhance the traditional text, and even graphics presentation causes the [educational] efficacy to explode exponentially."

Such a multimedia explosion may be necessary in our classrooms, Blakeney says. "The children who are coming up through our schools today deal in an entirely different grammatical context than you and I did—and it's caused by television, radio, and music. There's a new grammar, and the grammar that they're used to now is video images: MTV."

Multimedia can also save schools money. "Chemistry is an example," Blakeney says. "To be able to do experiments interactively without caustic chemicals, very expensive chemicals, or environmentally damaging chemicals can yield great savings."

Multimedia devices will also appear outside the classroom, in the public information arena. "This involves the placement of interactive multimedia displays in kiosks or in accessible locations in malls, lobbies of office buildings, and cafeterias where either the general public or a specific audience can touch the screen or access information easily, without being computer literate or application literate," Blakeney explains.

In Tampa, Florida, a pilot program involving public kiosks allows citizens to find out where to get a marriage license, how to lodge a complaint against city hall, and how to gain access to other services.



PETER BLAKENEY

THERE'S A NEW GRAMMAR, AND THE GRAMMAR IS VIDEO IMAGES.

Retail business will also feel the impact of multimedia. "The fourth arena is what we call *merchandising,*" Blakeney says. "The placement of kiosks on the retail floor will be used to supplement as well as replace employees in merchandising products."

Multimedia's greatest impact may come in the way we use our computers. "The fifth arena," Blakeney says, "consists of masking complexity, increasing ease of [computer] use. You use icons, still images, and touch to mask the complexity of using the computer. The user does not have to understand the nomenclature of the computer in order to navigate through the computer."

Blakeney also believes that multimedia will become a home technology, but that it may take awhile.

It's in our schools, however, where multimedia's impact may exert the largest long-term influence. Blakeney sees computers and multimedia at the heart of the transformation that will soon sweep through our educational institutions.

"Everybody who's 35 years old or older grew up in what was essentially an Industrial Age educational system—a system that provided education by presentation, recitation, and regurgitation of information," he says. "That doesn't teach people to correlate or analyze information; it teaches students to store facts and repeat them."

Those days, Blakeney argues, are gone. "The new paradigm is that we need to be able to teach children to correlate, analyze, and draw conclusions. It's an *informational* education system as opposed to an industrial education system. That's what multimedia does. It allows us to present information in a variety of ways. The user can explore the information, as opposed to simply receiving it, repeating and regurgitating it." ◘

Join Our Reader Research Panel!

Open House . . . and you're invited to participate in a new and extremely important program for *COMPUTE!* magazine readers. In order to fully understand your opinions, attitudes and reading preferences, we are establishing a Reader Research Panel.

Scientifically selected samples of our panel members will receive up to four survey mailings over the next 12 months. Survey results will help us to better design *COMPUTE!* magazine with your interests in mind.

Please apply to participate in our Reader Research Panel today by completing the attached application form and mailing it back to Data Processing Firm, Media Research Associates, no later than June 30, 1990. All statistical information must be provided in order to select a panel representative of our entire readership. All information will remain confidential.

If selected, you will be contacted accordingly. Thank you for your cooperation.

William Tynan

William Tynan
Publisher

RSVP to: Media Research Associates
230 Park Avenue, Suite 1567, New York, NY 10169

Application Form COMPUTE! Magazine Reader Research Panel
ALL INFORMATION WILL REMAIN CONFIDENTIAL.

1. Are you
   - Male . . . . ☐
   - Female . . . . ☐
2. What is your marital status?
   - Married . . . . ☐
   - Single . . . . ☐
   - Widowed . . . . ☐
   - Separated or Divorced . . . . ☐
3. What is your age?
   - Under 25 . . . . ☐
   - 25–29 . . . . ☐
   - 30–34 . . . . ☐
   - 35–39 . . . . ☐
   - 40–44 . . . . ☐
   - 45–49 . . . . ☐
   - 50–54 . . . . ☐
   - 55–59 . . . . ☐
   - 60–64 . . . . ☐
   - 65+ . . . . ☐
4. What was your total household income (from all sources) in 1989?
   - Under $25,000 . . . . ☐
   - $25,000–$34,999 . . . . ☐
   - $35,000–$39,999 . . . . ☐
   - $40,000–$49,999 . . . . ☐
   - $50,000–$64,999 . . . . ☐
   - $65,000–$74,999 . . . . ☐
   - $75,000–$99,999 . . . . ☐
   - $100,000+ . . . . ☐
5. What is the highest level of education that you have attained to date?
   - Attended High School . . . . ☐
   - Graduated High School . . . . ☐
   - Attended College . . . . ☐
   - Graduated College . . . . ☐
   - Post-Graduate Study . . . . ☐
6. What group below best describes your occupation?
   - Professional/Technical . . . . ☐
   - Manager/Administrator . . . . ☐
   - Clerical/Sales . . . . ☐
   - Craftsman/Foreman . . . . ☐
   - Other Employment . . . . ☐
   - Student . . . . ☐
   - Not Employed . . . . ☐
7. How did you acquire this copy of *COMPUTE!?*
   (Please check only one answer.)
   - I subscribe and received it through the mail . . . . ☐
   - Another member of this household subscribes and received it through the mail . . . . ☐
   - I bought it at a grocery, newsstand, drugstore, etc. . . . . ☐
   - Another member of this household bought it at a grocery, newsstand, drugstore, etc. . . . . ☐
   - Other (specify) . . . . ☐

Name ______________________
Address ____________________
Apt. # _______ Phone ____________
City _______________________
State __________ ZIP ____________

COMPUTE!
THE CHOICE OF HOME PC ENTHUSIASTS SINCE 1979

Enhance your Tandy !!!

We also carry a full line of upgrades for your Panasonic FX series, IBM and compatibles.

DOS 4.01

The Latest for less, supports larger than 32 meg partitions, and comes with DOS SHELL.

5.25" version	89.00
3.5" version	99.00

EX / HX Hard Drive Systems

Complete, plug-n-play ! 15 month warranty !

21 Megabyte	389.00
32 Megabyte	439.00
42 Megabyte	489.00
68 Megabyte	589.00

EMS Boards

Upgrade to Expanded Memory on your Tandy or Panasonic FX series computer. MicroMainframe 5150 board. Holds up to 2 megabytes of memory.

Board 0K	159.00
Board w/256K	199.00
Board w/512K	249.00
Board w/1 MEG	309.00
Board w/2 MEG	389.00

Prices include 150ns chips, add $20 for 120ns chips needed on some machines.

Speed Up Solutions

These products were designed to speed up your computer creating more raw computing power. Some involve clock speed changes.

V20 for 1000,A,SX,IBM	29.00
V30 for 1000SL,FX,ATT	39.00
PC Sprint	75.00
PC Sprint IBM XT clones	85.00
PC Sprint Compaq	85.00

The PC Sprint boards will give a normtal XT user currently running at 4.77mHz a 100% increase in processing power.

EX/HX Memory Upgrades

Raise your systems memory the cost effective way with DCS memory upgrades. 1 yr warranty

Board 128K, adds 2 slots	149.00
Board w/384k and 2 slots	189.00

HARD CARDS

Plug-n-Play, Tandy / IBM switchable and works on 1000,A,SX,TX,SL,TL,TL/2,SL/2,3000,1200. 15 month warranty !

21 Megabyte	279.00
32 Megabyte	299.00
42 Megabyte	389.00
68 Megabyte	589.00

Memory Upgrade Chip Sets

Use these chip sets to upgrade your system memory to 640K! At these prices you can't afford not to . . .

CS8150 for 1000SX,EX,HX	59.00
CS8260 for 1000SL	59.00
CS8370 for 1000TX,TL	49.00
CS8480 for 3000NL	59.00

Zucker Memory Boards

This board will increase the memory on a original Tandy 1000 or 1000A from 128K to 640K on one board using only one slot. Last Chance ! Buy Now!

Tandy 1000,A	279.00
Tandy 1200, IBM XT	199.00

Floppy Drives

Add a floppy drive to your existing system. All drives are internal and come complete with mounting hardware and cables. SAVE ! SAVE!

360K 5.25"	79.00
1.2 M 5.25"	149.00
720K 3.5"	99.00
1.44 M 3.5"	149.00

Modems

All modems are Hayes command set compatible, auto answer, auto dial, and auto baud detect.

2400 B Internal	79.00
1200 B Internal	59.00
2400 B External	129.00
1200 B External	89.00

The "How to" guide to upgrading your Tandy 1000 series computer.

The "How to" guide to upgrading your Tandy 1000 series computer
by Chris Brownstead

This comprehensive guide is a must for any Tandy user who wants more from their 1000 series computer. Covers all models of the 1000 from the original to the EX / HX through the TL. Read about upgrades that you can make before you buy. What makes Tandy so different from the normal XT? There are sections for speed, video, memory, sound, and software as well as many more!

Buy now and save . . . 19.95
add $3 shipping . . .

VGA Combinations

Go for the gold in graphics with this VGA monitor and card combo! 640 x 480 resolution and 256 colors.

VGA COMBO	489.00

IDE Drives for TL/2

New technology at a reasonable price! Does not use a slot, plugs into the existing TL/2 IDE interface connection.

20 MEG	289.00
40 MEG	339.00

Smart Mouse

This serial mouse comes complete with Dr. Hallo III drawing software and a mouse pad. Incredible deal at

ALL Models	49.00

EX / HX External Floppies

Add an external floppy drive to your EX or HX and move into the world of multi-disk systems.

360K, 5.25" drive complete	129.00
720K, 3.5" drive complete	129.00

Performance Software

FAST disk cache improve access time	75.00
SPINRITE disk low level formatter	75.00
TURBOEMS EMS simulation software	75.00

DCS Industries, Inc.
141 Columbus Rd.
Athens, Ohio 45701

1-800-537-3539

LOCAL : 1-614-594-4180 FAX : 1-614-592-1527

TOLL FREE TECHNICAL SUPPORT !
DEALER ORDERS WELCOME !
NO SURCHARGE FOR VISA or MASTERCARD!

Tandy is a registered trademark of Tandy Corp.
IBM is a registered trademark of International Business Machines
Prices and availability are subject to change without notice!

Circle Reader Service Number 122

CLASSIFIED

NEWSLETTERS

CompuTIPS

Tips - Tricks - Techniques

Wordprocessing, DOS, Databases
D.T.P., Spreadsheets, Q&A'S

First Newsletter FREE

Send $2 s/h to Dyna-Comp Computer Services
1960 Kapiolani, Ste. 113-586, Honolulu, Hi. 96826

SOFTWARE

TRY BEFORE YOU BUY: C64, 128, AMIGA. Games utilities, educn'l, classics, new releases, 100's of titles. Free brochure. Specify computer. RENT-A-DISC, Frederick Bldg. #221, Hunt'n, WV 25701 (304) 529-3232

Professional HANDICAPPING SOFTWARE for Thoroughbred, Greyhound, Harness, Quarterhorse, Pace. Accurate to 82%. $49.95 each. Demo/Manual $7.00. IBM, Apple, C64/128. FREE Catalog. ADPA, Box 7990-CP040, Fremont CA 94537 CALL: (415) 795-0504

BASEBALL FANS!!! Pursue the Pennant PC BB game for IBMs with 256K. Send $10 deposit for Demo Version to: PTP, Box 38364-C, Greensboro, NC 27438. Or call 1-(800)765-4PTP for info.

IBM - COMMODORE 64 & 128 - AMIGA. 1000's of PD/Shareware programs on 100's of disks. Free listing or $1 for large descriptive catalog (specify computer). DISKS O'PLENTY INC., 7958 Pines Blvd., Suite 270B, Pembroke Pines, FL 33024

YOUR IBM & COMP SHAREWARE DISTRIBUTOR. Over 800 in library-5¼" & 3½". Send 50¢ US stamp for winter catlg. T&Z Software, PO Box 780217-C, Sebastian, FL 32978-0217.

FREE CATALOG FOR COMMERCIAL SOFTWARE 30–60% off. Amiga, Apple, Commodore IBM, MacIntosh, Atari. DISK-COUNT SOFTWARE, Box 3, Carteret, NJ 07008. (800) 448-6658

UNIQUE FORCASTING SOFTWARE FOR STOCKS AND FUTURES USES POWERFUL LEADING INDICATORS. TRIAL $9(+6 S&H). SASE TO: RMC POB 60842, SUNNYVALE, CA 94088. Ph: (408)746-0477

FREE PUBLIC DOMAIN & SHAREWARE. IBM or C64 (SPECIFY). Send $2 for complete catalog and Sample disk (refundable). RVH PUBLICATIONS 4291 Holland Rd. Suite 562-A VA Beach, VA 23452. ASP Vendor

WIN - HANDICAP SPORTS WITH YOUR PC Send for free info. or $3 for 5¼" IBM compatible demo disk to RUTECH SOFTWARE, 6010 W. Cheyenne #15-945, LV, NV 89108

COMPUTER-AIDED-LIVING, a new detailed guide shows how to use your computer to control lights and appliances, pay bills, obtain free software, much more! Send $9.95 (ppd) to: DANIEL SYSTEMS, 36437 Spruce, Newark, CA 94560

IBM PD & SHAREWARE disk catalog 5¼" $1, 3½" $2, refundable with first order. ASP APPROVED VENDOR, Finto Software, Dept M, Rt 2 Box 44, Rosebud, TX 76570

GREATER MIDWEST MICRO SOURCE - Your **BEST** SOURCE of IBM Comp Shareware & Supplies for FREE Catalog write to GMMS Dept 101, 2200 180th Ave NW, Andover, MN 55304

FREE CATALOG—OVER 1000 PUBLIC DOMAIN Programs of IBM PC and Compatibles. Buy or Rent. Low as $1.00/disk. Write to Softshoppe, POB 709, Ann Arbor, MI 48106

SHAREWARE & PUBLIC DOMAIN SOFTWARE IBM ($1) Apple ($3) catalogs available. Catalog fees credited on 1st disk order. B&M Sales, POB 458, Wabash IN 46992

GET THE MOST, PAY THE LEAST in IBM & Comp PD/Shareware. Send $1 for catalog plus free disk of games & utilities-featuring **Nyet**, a Tetris clone. Specify 5¼" or 3½". CJCware, POB 2299, Champaign, IL 61825

BUSINESS OPPORTUNITIES

HOW TO MAKE THOUSANDS OF $$$$ with your own part-time HOME COMPUTER BUSINESS. Will teach & help you setup. Send $1 for INFO, Box 1442-A1, Orange Park, FL 32067

COMPUTE! Classified is a low-cost way to tell over 225,000 microcomputer owners about your product or service.

Rates: $25 per line, minimum of four lines. Any or all of the first line set in capital letters at no charge. Add $15 per line for boldface words, or $50 for the entire ad set in boldface (any number of lines.) Inquire about display rates.

Terms: Prepayment is required. Check, money order, American Express, Visa, or MasterCard is accepted. Make checks payable to COMPUTE! Publications.

Form: Ads are subject to publisher's approval and must be either typed or legibly printed. One line equals 40 letters and spaces between words. Please underline words to be set in boldface.

General Information: Advertisers using post office box numbers in their ads must supply permanent address and telephone numbers. Ad will appear in next available issue after receipt.

Closing: 10th of the third month preceding cover date (e.g., June issue closes March 10th). Send order and remittance to: Kathleen Ingram, Classified Manager, COMPUTE!, P.O. Box 5406, Greensboro, NC 27403. To place an ad by phone, call Kathleen Ingram at (919) 275-9809.

Notice: COMPUTE! Publications cannot be responsible for offers or claims of advertisers, but will attempt to screen out misleading or questionable copy.

Classified Display Rates: Classified display ads measure 2¼" wide and are priced according to height. 1" = $250; 1½" = $375; 2" = $500; 3" = $600; ($100 for each additional inch, e.g. 4" = $700, etc.) Preferred supplied material is Velox or PMT.

EARN $400/MONTH FROM YOUR HOME WITH A COMPUTER

Start part-time with potential earnings of $10,000 or more per month. You do not need to own or know how to run a company—we will provide free training. If you purchase our software we will give you a computer and printer. Complete financing available. To receive a FREE 2-hour Cassette and Color Literature.

Call Computer Business Services
1-800-343-8014. X303

BOOKS

DISCOUNT COMPUTER BOOKS. Thousands of titles available. Please call or write for your free catalog today. BOOKWARE 147 Campville Rd, Northfield CT 06778 (203) 283-6973 (800) 288-5662

FREELANCERS

PC PROGRAMMERS * TECH WRITERS Do you have a package worth marketing? Are you ready to start your own freelance career? For more info send $1. Acer Enterprises, PO Box 751712, Memphis, TN 38175

HARDWARE

MARYMAC INDUSTRIES INC

Our 13th year of DISCOUNTS

COMPUTERS FAX CELLULAR PHONES

Tandy Radio Shack SCO

Fgt. Prepaid. Save Tax
Toll Free 800-231-3680
22511 Katy Fwy., Katy (Houston) TX 77450
1-713-392-0747 FAX: (713)574-4567

SPANISH SOFTWARE

SPANISH SOFTWARE FOR WRITING AND EDUCATION

AT LAST! FOR STUDENTS, WRITERS & TEACHERS.

ARANDU ESCRITOR CREATIVO (2 Vol.) Elaborate your ideas into a meaningful composition. An efficient tool for critical thinking, paired with an easy-to-use word processor in Spanish. **$179.95**

The following collections were developed by teachers and programmers with years of experience in educational software:

SPANISH LANGUAGE (2 Vol.)	**$44.95**
MATH (3 Vol.)	**$64.95**
MATH & PHYSICS SIMULATION (5 Vol.)	**$219.95**

30-Day Money-Back Guarantee

ARANDU SOFT
Tel: 800-627-3764 Fax: (305) 591-1940
7224 NW 31 St., Miami, FL 33122

EDUCATION

B.Sc. & M.S. in COMPUTER SCIENCE

The American Institute for Computer Sciences offers an in-depth correspondence program to earn your Bachelor of Science and Master of Science degrees in Computer Science at home. BSc. subjects covered are: MS/DOS, BASIC, PASCAL, C, Data File Processing, Data Structures & Operating systems. MS program includes subjects in Software Engineering and Artificial Intelligence.

AMIERICAN INST. for COMPUTER SCIENCES
1704-CP 11th Avenue South
Birmingham, AL 35205
CALL (205) 933-0339

The Best...The Most...For Less!

Top Quality User-Supported PC-Compatible Software

As Low As **99¢** Per Disk

BUSINESS/ACCOUNTING/FINANCE

ACS In-Control	100, 101	A system for sales prospecting, lead tracking, and billing (2 Disks)
Biller	105	A complete billing system for small businesses. Prints statements and reports
Business Contacts	112	Helps you keep track of critical information about your contacts
Business Forms	117	100 form letters for all purposes (employment forms, contracts, etc.)
Easy Project	122	A superb project manager software package (Gantt charts, critical path)
Employee System	127	Personality analysis that helps you reduce turnover
Finance Manager II	132	A very powerful and complete G/L package for small business accounting
FONE	137	Times and records your time on the phone. Helps you save money!
Form Master	142	An easy-to-use business form generator. Create any form, easily!
Job Cost	147	Excellent job costing program. It's the one you've been waiting for!
Legal Forms	149	A do-it-yourself legal forms kit
Managing People	151	A complete management training course. Tests your skills and gives advice
MarketCGA	152	Tracks and charts the trends for all your stocks CGA
Medlin Accounting	157	A complete accounting package with G/L, A/P, A/R, and Payroll
Merchant Accounting	162, 163	Designed for any businesses needing an inventory system (2 Disks)
Painless Accounting	168–170	The most complete and easy-to-use accounting system (3 Disks) HD
PC-Loans	181	This program computes payments using most common loan methods
PC-Payroll	182, 183	A complete, menu-driven payroll system (2 Disks) HD
Solve-It!	186	Does all necessary financial calculations (IRR, PV, FV, annuities)
Ticklex	191	Rated as the most powerful time-management software available! HD 512K
Year Planner	199	A super calendar and organizer program that can print wall calendars!

DATABASE

dFLIPPER	215	Great utility program for editing any dBASE or compatible file
dLITE	219	A dBASE multi-utility that includes pop-up access to 10 databases
dPROG	223	An amazing dBASE III autoprogrammer that writes the code for you!
Doctor Data Label	224	A professional mail list manager system (requires HD or 2 floppy drives)
File Express	227, 228	Great database package which combines power and ease of use (2 Disks)
Idea Tree	232	An incredible program that stores and organizes your ideas and thoughts
Mass Appeal	236	Excellent mail list program that prints mailing labels
PC-File 5.0	244–246	The most powerful dBASE compatible database package! HD 512K (3 Disks)
Wampum	249	A powerful, menu-driven dBASE compatible program HD

SPREADSHEET

As-Easy-As	255	Fantastic Lotus 1-2-3 compatible spreadsheet program
Lotus Macros	265	Collection of powerful macros for 1-2-3 or compatible programs
Lotus Templates	269	Lots of useful templates for Lotus compatible programs
PC-Calc+	275–277	The most powerful spreadsheet package for under $200! (3 Disks)
Pivot	262	Prints Lotus and As-Easy-As spreadsheets sideways
Power Worksheets	288	A set of powerful worksheets for Lotus 1-2-3 or compatible programs
CubeCalc	292	An amazing 3-dimensional spreadsheet program

WORD PROCESSING

Galaxy	310	The most easy-to-use word processing program available
PC-Outline	320	An idea organizer and free-form database
PC-Write 3.03	325–327	Full-featured word processing with spell checking. Rated #1 (3 Disks)
PC-Write Macros	331	Over 100 macros for PC-Write users
Pro Scribe	337	This program will improve the clarity and impact of your writing
Thesaur	345	Very useful when you are looking for the perfect word to make your point
Writer's Heaven	348	A PC-Write enhancement. Make the BEST even better!

WORDPERFECT 5.0

PC-Draft III	365, 366	Create your own graphic images. Several examples included (2 Disks)
WP 5.0 Art/Graphics	375, 376	A big collection of clipart images for WordPerfect (2 Disks)
WP 5.0 Learning System	380, 381	Learn to use WordPerfect 5.0 quickly and easily (2 Disks)
WP 5.0 Macros	385, 386	Over 100 excellent macros for WordPerfect (2 Disks)
WP 5.0 Menu/Mice	390, 391	A collection of menu systems and mouse drivers (2 Disks)
WP 5.0 Tools	395, 396	Several WordPerfect utilities (2 Disks)

UTILITIES

AutoMenu	405	Puts all the programs on your hard drive into a selection menu HD
Baker's Dozen	409	13 handy utilities that every computer system needs
Best DOS Utilities	413	A print spooler, a RAM disk, and much more!
CatDisk	417	This menu-driven program catalogs and organizes your disks
Hard Disk Utilities	420	A whole range of hard disk utilities and enhancements
HD Backup	424	An easy-to-use program that backs up your hard drive on floppy disks HD
HD Menu	425	An easy-to-set-up menu for the programs on your hard drive HD
HomeBase	427, 428	Desktop organizer that is better than Sidekick! (2 Disks)
Logit!	432	Keeps an active record of who has used the computer and for how long
Masterkeys	436	Disk multi-utility like Norton Utilities. You'll use this a lot!
PC-Deskteam	445	Useful desktop accessories (clock, calendar, calculator, much more)
Quickcache	455	This disk caching utility will speed up your computer, dramatically!
ScreenSaver	459	Saves your monitor (any kind) from burn-in
SimCGA	463	Lets a monochrome system run many CGA programs
Space Maker	466	Lets you fit more data on any floppy or hard disk
Still River Shell	469	Excellent DOS command shell. Makes using DOS easier and quicker!
TreeView	472	A superior DOS command shell with pull-down menus
Virus Killers	474	Several virus detection and elimination programs

GRAPHICS

Charts Unlimited	505	Allows quick and easy creation of virtually any kind of chart or diagram
Draft Choice	509	Excellent menu-driven CAD program with optional mouse support
EGA Fonts	513	Over 50 fonts to give you excellent EGA text displays (req. EGA)
Finger Paint	521	Use your keyboard (or a mouse) to draw great color pictures CGA
Grasp	525	A system for creating and running graphical demos and slideshows CGA
Image 3-D	529	Create, view, move, scale, and edit 3-D objects CGA 512K
Mind Chart	533, 534	A screen graphics charting and design program (2 Disks)
Optiks	538	A graphic multi-utility which can convert to/from over 25 formats CGA
PC-Key Draw	542–545	Powerful CAD design program. Works with keyboard or mouse (4 Disks) HD
VGA Paint	548	A super-duper paint program—only for you lucky people with VGA

PRINTING

Address-O-Matic	553	Envelope printing utility
Banner/Sign Makers	556	Print your own banners and signs on your Epson compatible printer
Bradford	559	A super collection of beautiful dot-matrix fonts
Calendar Printer	562	Design and print a calendar for any month or year
City Desk	565	Create and print your own newsletters and flyers
Epson Utilities	569, 570	Utilities and fonts to enhance your print quality (2 Disks)
E-Z Forms	573	A program that makes it easy to create and print office forms
Formgen	578	Quickly create and print any type of form or chart
ImagePrint	579	Turns your 9-pin dot matrix printer into a letter-quality printer
LaserJet Utilities	582, 583	Fonts and utilities for HPLaserJet compatible printers (2 Disks)
Letterheads Plus	587	Print custom letterheads with your Epson or IBM compatible printer
Mr. Label	589	Versatile address printing program
On Side	591	Prints spreadsheets (or anything) sideways
PrintMaster Graphics	593, 594	Large collection of clip-art for PrintMaster users (2 Disks)
PrintShop Graphics	596, 597	Collection of graphics that you can edit/print with PrintShop (2 Disks)

EDUCATION

Amy's First Primer	605	A collection of six fun learning games for kids 4–8 CGA
Computer/DOS Tutor	609	Makes learning to use the computer easy—and fun!
DOS Learning System	613	Great DOS tutorial. Takes the frustration out of using a computer!
Facts 50	617	A graphic geography lesson of the United States CGA
Funnels and Buckets	621	Wow! They've found a way to make learning math fun for kids CGA
Geography	625	A quiz on the nations of the world and their capitals
Googol Math	629	Math learning system with graphics and several levels of difficulty CGA
PC-FastType	637	A really fun and useful interactive typing teacher CGA
Physics	641	High school level physics instruction
Play 'n' Learn	645	A collection of six learning games for small children 2–5 years CGA
Presidents	649, 650	Both a learning tool and quiz on the U.S. presidents (2 Disks)
School Mom	654	Lessons on math, art, music, and spelling for children 2–12 years old
Spanish I & II	658, 659	Makes learning Spanish vocabulary easier and more productive (2 Disks)
Speed Read	665	Teaches you the principles and concepts of speed reading
Teachers' Tools	669	Tracks grades and attendance for classes up to 100 students
Typing Teacher	673	Helps you practice and improve! Tracks and displays your progress
Vocabulary Builder	681–685	7500 practice words for the SAT. Improve your word power! (5 Disks)
World	690	A fascinating electronic globe/database of world geography CGA

HOME/FAMILY

Computer Chef	706, 707	A recipe database with several excellent dishes for you to try (2 Disks)
Diet Disk	709	A complete weight-loss system with calorie look-up tables
Express Check	713	Checkbook program that handles several accounts and does reconciliation
Family Tree	719	Use this excellent genealogy program to trace your family roots
Gardener's Assistant	732	Helps you to plan and cultivate your garden
Home Inventory	738	Keeps a record of all your personal possessions
Home Manager	744	Keeps track of your household budget
Personal Finances	756	Tracks your income and expenses. Helps you stick to a budget
Shopper's Assistant	762	A complete grocery shopping aid and coupon filer
Video Librarian	768	Keeps track of your video collection

MISCELLANEOUS APPLICATIONS

PC-Musician	789	Compose, edit, and play back your musical creations
Tune Trivia	797	Your computer will play popular tunes—can you name them?
Astrology	802	Let this program tell you what lies ahead in your stars
Biorhythms	806	Computes and displays/prints your personal chart for any time period
Handwriting Analyst	824	Does an in-depth personality analysis from any handwriting sample
Lotto!	832	See if your computer can help you win the lottery
Micro World Databank	834–838	A database of worldwide information compiled by the CIA (5 Disks)
PC-Bartender	842	Learn to mix cocktails like a professional bartender
Rental Management	846	Complete rental management system for landlords
Resume	850	Helps you write a better, more effective resume
Stress Test	854	Analyzes your level of stress and can give you warnings
Wisdom of the Ages	862–864	Over 6000 of the greatest quotes from history's greatest minds (3 Disks)
Zip Code Finder	868	Searches and finds any zip code—FAST!

RELIGION/BIBLE

BIBLE Men	876	A quiz on the people mentioned in the BIBLE
BIBLE-Q	877	A fun BIBLE quiz. Test your Biblical IQ
Church Membership	885	Helps a church keep track of all its members
New Testament	888, 889	The complete King James New Testament on disk (2 Disks)
Old Testament	891–896	The complete King James Old Testament on disk (6 Disks)

GAMES

Adventures 1	901	Five great adventure games that you are sure to enjoy
Adventures 2	902	Five more adventure games that will keep you intrigued for hours
Arcade Baseball	905	A game of baseball strategy and arcade fun! CGA
Arcade Games 1	907	Two great PAC MAN games and much more! CGA
Arcade Games 2	908	Several fun games featuring Q-BERT, the arcade favorite! CGA
Arcade Games 3	909	A version of the classic arcade hit, CENTIPEDE and more CGA
Arcade Games 4	910	Collection of space games including SPACE WAR and ASTEROIDS CGA
Blackjack	913	Two great versions of blackjack to test both skill and luck!
Board Games 1	915	Two fantastic versions of everybody's favorite, MONOPOLY
Board Games 2	916	Includes both BACKGAMMON and CHECKERS CGA
Board Games 3	917	You'll love this collection, which includes RISK and OTHELLO CGA
Card Games	923	Great versions of poker and blackjack, Video Poker/Ultimate 21
Crime Lab	926	A fun graphic murder mystery game CGA
Ed's Chess	935	A great chess game with different levels. Beats ChessMaster 2000!
Ford Simulator II	938, 939	Choose your Ford and test your driving skill on the tracks (2 Disks) CGA
Las Vegas Craps	945	Place your bet, roll the dice, play Las Vegas style
Maj Jongg	948	Play the ancient "tiles" game on your computer CGA
Miramar Flight Simulator	950	See if you are "TOP GUN" material as you fly a fully armed F-18! CGA
NINJA	953	You must battle evil Ninja warriors to the death! CGA
PC-Jigsaw	959	You see a nice picture, then it's scrambled. Can you put it together?
PC-Pro Golf	961	You choose the club, angle, and strength of each shot. Real fun! CGA
Pinball	965	Five SUPER pinball games. Realistic sound and action CGA
Sans Graphics 1	971	Games that work great on any system (no graphics required)
Scrabble	973	Test your word power with this long-time popular game CGA
Sharp Shooter	975	Battle it out—tank vs. tank CGA
Star Trek	977	A Star Trek strategy game and a Star Trek trivia game
Striker	978	You must maneuver your attack helicopter behind enemy lines CGA

EGA GAMES (These games require EGA graphics cards)

Bass Tour	981	An incredible fishing simulator with great graphics EGA
Captain Comic	984	Thrill to the commercial quality graphics of this FANTASTIC game EGA
EGA Arcade 1	986	Excellent EGA version of ASTEROIDS. BREAKOUT is also included EGA
EGA Coloring Book	989	Kids really love to use this coloring program! EGA
EGA Cunning Football	990	You call the plays and control the key players. Great fun! EGA
EGA Games 1	992	A collection of favorites including SCRABBLE and SOLITAIRE EGA
EGA Golf	995	A game of skill, strategy and reflex. Great graphics and realism EGA
EGA Risk	997	Use your strategy and cunning as you set out to rule the world! EGA
EGA Trek	999	This is the ULTIMATE Star Trek adventure. You're the captain! EGA

CGA=Requires Color Computer HD=Requires Hard Drive 512K=Requires 512K RAM

PRICES

Disks Ordered	Price Per Disk
1–9	$1.99
10–19	1.75
20–49	1.49
50–99	1.25
100+	.99

If you need 3½" disks add $1 each. Count each disk in multiple disk sets. Add $4 shipping per order. (Canada add $6—Foreign add $8)

Direct Link Software
P.O. Box 2302
Muncie, IN 47307
1-800-999-6883
(Call today or use a separate sheet and mail in your order.)

COM6

VISA **Call Today 1-800-999-6883** MasterCard

Circle Reader Service Number 107

SAVE UP TO 70%

CALL FOR YOUR FREE CATALOG TODAY!

1-800-BUY-WISE EXT. 51

Since 1979

WE CARRY 1000s OF HARDWARE, SOFTWARE & ACCESSORY ITEMS IN STOCK!

LOWEST PRICED DISKETTES ANYWHERE!

PREMIUM QUALITY

5 1/4" DS/DD from **19¢** ea.

5 1/4" DS/HD from **39¢** ea.

3 1/2" DS/DD from **44¢** ea.

3 1/2" DS/HD from **84¢** ea.

100% Certified • Lifetime Guarantee

TEAC® DISK DRIVES

360K 5.25" INTERNAL FLOPPY DRIVE ....**Too Low to Print!**

720K 3.5" INTERNAL DISK DRIVE......................**Call for Price**

1.2 MEG 5.25" INTERNAL DISK DRIVE Was $89.95................. $\$79^{95}$

1.44 MEG 3.5" INTERNAL DRIVE

Call for Our Low Price

100% HAYES COMPATIBLE MODEMS

1200 BAUD INTERNAL........ $\$34^{95}$

Modem software included - a $29.95 value! *List $129.95*

1200 BAUD EXTERNAL....... $\$49^{95}$

Fits in the palm of your hand! Modem software included - a $29.95 value! *List $199.95*

2400 BAUD INTERNAL........ $\$74^{95}$

Made in the USA! Modem software included - a $29.95 value! *List $129.95*

2400 BAUD EXTERNAL....... $\$96^{95}$

Made in the USA! *List $349.95*

PRINTERS

10" 180 CPS PRINTER

WITH NEAR LETTER QUALITY

- Lifetime warranty on printhead
- Dot addressable graphics & 8K buffer

NO ONE CAN SELL THIS ONE FOR LESS!

$\$149^{95}$ List $299.95

15" 720 CPS PRINTER

MULTI-HEAD 15" WITH 150 CPS NLQ

- Print Speed of 214 lpm; draft & 30.0 lpm; NLQ
- 6 print heads achieve *high dot resolution* in higher speed - excellent print quality at 6 times the speed

$\$499^{95}$ List $1995.95

AT $299 WHAT ARE YOU WAITING FOR?

NEW! AMSTRAD® PC20

IBM XT® COMPATIBILITY

Package Includes:

- 512K RAM memory
- 3 1/2" 720K disk drive
- Monochrome graphics & CGA color graphics built-in
- Parallel and serial ports for printer or modem
- PC joystick port
- Microsoft DOS™ V.3.3
- Digital Research's GEM™ Desktop ("point & click")
- Digital Research's GEM™ Paint
- Micro-compatible mouse

AT AN UNBELIEVABLE $\$299^{95}$

List $699.95

CALL NOW FOR SYSTEM PRICING

Monitor Optional

SAVE UP TO $300 ON

Seagate HARD DRIVES

20 MB ST-225 HALF HEIGHT DRIVE KIT......................... $\$224^{95}$

20 MB storage, supports MS-DOS, cables & controller included. Fits IBM® PC, XT & compatibles. *List $499*

40 MB ST-251-1 SUPER FAST DRIVE............**Too Low to Print!**

40 MB storage, supports MS-DOS, 28ms access time. *List $499*

SCSI ST157N DRIVE......**Too Low!**

20, 30 & 45 formatted MB in 3.5" form. & SCSI interface incl.

SCSI ST296N DRIVE......**Too Low!**

20, 30, 60 & 80 formatted MB in 5.25" form. & SCSI interface included. Fits IBM® PC, XT, AT or 386 class storage needs.

VIP 12 MHz 286

LOWEST PRICED IBM® AT COMPATIBLE

COMPLETE AT® WITH NO HIDDEN COSTS!

- 512K RAM, Expandable to 4 MEG
- Monochrome Graphic Parallel (MGP) Card
- Parallel, Serial & Game Ports Standard
- 1.2 MEG Floppy Drive
- Clock/Calendar & 200 Watt Power Supply
- Built-in Math Co-processor Slot
- FREE DOS (List $69.95), DOS Tutor (List $29.95) & Word Processor (List $24.95) - A $124.85 Value!
- 9 VOLT INTERNAL BATTERY BACK-UP FREE

WITH $124.85 IN FREE SOFTWARE

FANTASTIC BUY! $\$599^{95}$

List Price $1424.80

CALL FOR SYSTEM PRICING

COLOR MONITORS

PENOR 14" RGB 0.43 Dot Pitch

List $399.95.............. $\$199^{95}$

MAGNAVOX VGA Analog Input

List $499.95.............. $\$329^{95}$

LEADING TECHNOLOGY 14" MULTISCAN 1 Year Limited Warranty

List $599.95.............. $\$399^{95}$

16 MHz 386SX

386 PERFORMANCE AT A LOW 286 PRICE!

- IBM AT® COMPATIBLE
- Phoenix BIOS 386SX-16 MHz CPU
- 1 MB Memory, Expandable to 8 MEG
- Full Case/3 Open Drive Bays
- Serial, Parallel & Game Card, MGP Card
- Hard Disk Floppy Controller
- 1.2 MEG Floppy Drive
- 101 Enhanced Keyboard
- FREE MS-DOS 4.01 (List $79.95), GW BASIC (List $19.95) & DOS Tutor (List $29.95) - A $129.85 Value!

WITH $129.85 IN FREE SOFTWARE

GREAT BUY! $\$979^{95}$

List Price $2124.85

CALL FOR SYSTEM PRICING

Prices do not include shipping charges. Call to get your lowest delivered cost. We insure all shipments at no extra cost to you! All packages are normally shipped UPS Ground. 2nd day and overnight delivery are available at extra cost. We ship to all points in the US, Canada, Puerto Rico, Alaska, Hawaii, Virgin Islands and APO-FPO. Monitors only shipped in Continental US. Illinois residents add 6.5% sales tax. Prices and availability subject to change without notice. Not responsible for typographical errors or omissions. *Computer Direct will match any current (within 30 days) nationally advertised price on exact same items. Shipping and sales tax not included. Verification required.

FAX Ordering 708-382-7545 Outside Service Area, Please Call 708-382-5058

Monitors Optional. IBM is a registered trademark of International Business Machines

COMPUTER DIRECT, INC.
22292 N. Pepper Road
Barrington, IL 60010 Exp 6/30/90

"We Love Our Customers"

Circle Reader Service Number 114

$299.95!

WE MUST BE CRAZY...

TO SELL A COMPUTER WITH FULL IBM® XT COMPATIBILITY AT THIS PRICE

The Amstrad PC20 is fast and powerful. It has a 16-bit processor operating at *turbo speed.* This means the PC20 will handle your programs at up to twice the speed of its competition. It's great for the student at home or away, the businessperson at home or at the office, the game player at home and the organizer at home.

▼ LOOK AT ALL YOU GET!

- 8MHz 8086 16-bit processor
- 512K RAM memory
- PC compatibility (two full PC expansion slots)
- Built-in CGA/MDA graphics color adaptor
- Parallel centronics standard printer port
- Serial (RS-232) communications printer/modem port
- Enhanced AT 102 keyboard
- 720K 3¹/²" disk drive
- Expansion port for 5¹/⁴" disk drive
- Microsoft-compatible mouse
- Speaker with volume control
- Standard analog joystick port

▼ PLUS ALL THIS SOFTWARE!

- Microsoft DOS™ V.3.3 software
- Digital Research's GEM™ Desktop 3 with "point and click" software for use with mouse
- Digital Research's GEM™ Paint software
- Easy Working™ Tri-Pack with The Writer, Filer & Planner personal productivity programs

THE PRICE YOU'VE BEEN WAITING FOR!

$299⁹⁵

Manufacturer's Suggested Price $749.95 Monitor Optional

LOOK! LOWEST PRICES EVER FOR SOFTWARE

ENTERTAINMENT & EDUCATION

American Educational Computer	
• Reading Comprehension	$28.95
• Spelling	$28.95
Barrons	
• SAT	$33.95
Brodorbund	
• Where /Time/ Carmen?	$36.95
Electronic Arts	
• Indianapolis 500	$39.95
Microprose	
• Stealth Fighter F/19	$37.95
• Red Storm Rising	$31.95
• Gunship	$31.95
Microsoft	
• Flight Simulator	$38.95

FOR YOUR HOME OR OFFICE

5th Generation	
• Mace Utilities	$54.95
• Mace Gold	$87.95
Ashton-Tate	
• dBase IV	$467.95
Borland	
• Turbo C	$103.95
• Turbo Pascal	$103.95
• Turbo Assembler with Debugger	$103.95
• Sidekick Plus	$133.95
• Paradox	$467.95
• Quattro	$163.95
Broderbund	
• The New Print Shop	$36.95
• Graphics Library Sampler	$24.95
• Graphics Library Party Edition	$24.95
• Graphics Library School & Bus.	$24.95
Central Point	
• PC Tools Deluxe	$76.95
Chronos Software	
• Who•What•When	$117.95
Cross Talk Communications	
• Remote	$108.95
• Crosstalk XVI	$108.95
Dac Software	
• Dac Easy Light	$43.95
• Dac Easy Payroll	$57.95
• Dac Easy Accounting	$89.95
Expert Software	
• Will Power	$10.95
• Personal Publisher	$10.95
Funk	
• Sideways	$41.95
• Worksheet Utilities	$58.95
• Allways	$84.95
Great American Software	
• One Write Plus Accnting System	$177.95
• One Write Plus Payroll	$87.95
Hayes	
• Smartcom II	$87.95
• Smartcom III	$147.95
Imsi	
• Corel Drawl	$329.95
Intuit	
• Quicken 3.0	$38.95
Lotus	
• Lotus 1-2-3	$303.95
• Magellan	$129.95
• HAL	$99.95
• Agenda	$249.95
Maverick	
• Entrepreneur	$21.95
Microsoft	
• Learning DOS	$34.95
• Windows 286	$68.95
• Works	$98.95
• Windows 386	$127.95
• Word	$207.95
• Multiplan	$133.95
Languages	
• Quick C	$68.95
• Macro Assembler	$97.95
• Basic Compiler	$197.95
• C Compiler	$297.95
Monogram	
• Dollars & Sense	$68.95
North Edge Software	
• Timeslips III	$167.95
Peachtree	
• Peachtree Complete III	$145.95
Peter Norton	
• Norton Utilities Advanced	$99.95
• Norton Utilities Standard	$60.95
• Norton Commander	$99.95
Quarterdeck	
• Expanded Memory Manager 386	$64.95
Software Publishing	
• PFS: First Publisher	$77.95
• PFS: First Graphics	$87.95
• PFS: First Choice with Quicken	$103.95
• Professional Write	$137.95
• Professional File	$187.95
• Harvard Graphics	$297.95
Symantic	
• Q & A	$217.95
The XTree Company	
• XTree Pro	$77.95
Traveling Software	
• Laplink III	$83.95
WordPerfect	
• WordPerfect Library	$73.95
• WordPerfect Executive	$133.95
• WordPerfect	$259.95
Wordstar	
• Wordstar	$227.95
Wordtech System	
• DBXL	$143.95
• Quicksilver Diamond	$347.95
Xerox	
• Ventura Publisher	$497.95

We Won't Be Undersold!

WE CARRY THE LATEST VERSIONS!

COMPUTE!'s MARKETPLACE

Soar into the Wild Blue Yonder

The Official *F-19 Stealth Fighter* Handbook
by Richard G. Sheffield
Foreword by Major "Wild Bill" Stealey, President and Cofounder of MicroProse
$14.95, 192pp

Learn the ins and outs of flying MicroProse's new *F-19 Stealth Fighter* flight simulator. Study the practical hints and tips for flying the simulator and performing ground-attack and air-to-air tactics. Then read all the background information in the book to learn to fly the real F-19. In the final section of the book, you'll find yourself looking over the shoulder of an expert *F-19 Stealth Fighter* game player as he carries out several "dangerous" missions.

Order your copy today.

Send $14.95 plus $2.00 shipping and handling ($5.00 for orders outside the U.S. and Canada) and applicable sales tax* to:

COMPUTE!'s Bookshelf
P.O. Box 5188
Greensboro, NC 27403

I WAS A COMPUTER NERD

UNTIL MY COMPUTER TAUGHT ME TO PLAY THE GUITAR

Most computer programs don't improve your social skills. GUITAR TUTOR will. Playing an instrument is a skill people admire. GUITAR TUTOR will teach you using the same methods professional instructors do, but it's cheaper, faster, easier, and more fun. With GUITAR TUTOR and a little practice, you will play the guitar!

Available for Tandy/IBM and compatibles for only $29.95 (plus $2 S&H). Specify 5.25 or 3.5 disk and send to:

Northern Star Software
P. O. Box 63, Oak Creek, WI 53154

MasterCard ***CALL TOLL-FREE: 1-800-648-5286*** VISA

Circle Reader Service Number 125

15 FULL DISKS - FREE
SOFTWARE FOR IBM® COMPUTERS

TRY US! Get 15 disks full of our best selling software - **FREE!** Games, Business, Education, Graphics, Programmers' Utilities, Finance, Desktop publishing, more.
PAY ONLY $5.00 FOR SHIPPING

SATISFACTION GUARANTEED!

INTERNATIONAL SOFTWARE LIBRARY
511-104 Encinitas Blvd • Encinitas CA. 92024
VISA **619 942-9998** MasterCard
since 1985

Circle Reader Service Number 136

COMPUTERINSURANCE PLUS

- ✚ Replacement with no depreciation
- ✚ Covers computer hardware in home or office
- ✚ Easy to read policy
- ✚ Bonus 20% for software coverage
- ✚ Low $50 deductible
- ✚ Covers theft, fire, power surges, accidents, natural disasters, even earthquakes and flood
- ✚ Policy backed by an A+ company

THE COMPUTERINSURANCE AGENCY, INC.
136 Moore Lane
P. O. Box 385
Piedmont, SC 29673

Local 803-845-6699 • Hours: 10 a.m. to 6 p.m.

1-800-722-0385

Circle Reader Service Number 126

jwh: SoftWare

For The PC, XT, AT Compatible

jwh: MoneyBook V2.0. At last check balancing made fun, fast, easy and accurate. Full featured checkbook and accounts management. Very user friendly with all menu driven commands for speed and ease of use. Complete search capabilities on all categories for generating reports and summaries. Can be run from a single floppy B&W or color system. Due to popular demand and use, this software package has been updated with more features. Plus Color Options.
Order Disk #1032 .... $29.75 + s/h

jwh:FastMenu V2.3.
Fast easy Hard Disk Menu System.
Order Disk #1052 .... $24.95 + s/h

jwh:Home Inventory V.2.3
Home Inventory & Floor Plan Drawing
Order Disk #1009 .... $49.75 + s/h

jwh:SoftWare
P.O. Box 410
Berlin Hts., OH 44814

Add $3.50 Shipping/Handling

Circle Reader Service Number 112

CRYPTO CRUNCHER
FOR IBM & COMPATIBLE PCs

The Ultimate Cryptogram Program That Lets You...
• SOLVE • CREATE • STORE • PRINT • RESCRAMBLE
CRYPTOGRAM PUZZLES

CRYPTO CRUNCHER is a unique program that makes "cracking" cryptogram word puzzles challenging and fun! Puzzles may be entered from newspapers, magazines or the built-in puzzle library. Easy to use for novices or experts. Includes bonus solution print-out utility and 45 puzzles with solutions. Please specify 5.25" or 3.5" media with order.

Send Check or Money Order for $19.95 to:
RILCO SYSTEMS
P.O. BOX 730 – WATERFORD, NJ 08089
Please Allow 3–4 Weeks For Delivery

Circle Reader Service Number 127

GET INVOLVED WITH YOUR HOME COMPUTER!!

SEE PAGE 37 IN THIS ISSUE FOR *COMPUTE!*'S JUNE *SHAREPAK* DISK.

TOP-QUALITY SHAREWARE HANDPICKED BY THE EXPERTS!!

The World's BEST 101 Programs

The World's BEST User-Supported Software for IBM PC Compatibles
Programs Run from Gold Hill's Exclusive Menu System—Just Type GOLD
Same-Day Shipping • UPS 2-Day Air Available for only $3 More
Toll-Free Order Line • Visa/MasterCard Accepted • FREE Catalog
Unconditional Money-Back Guarantee!!

$1.99 ea. 10 or More

$2.49 ea. Less Than 10

Act Now!! 3 FREE DISKS* Limited Time!!

BUSINESS

- ☐ **Express Graph** (1106) Turns raw data into great business graphics.
- ☐ **Financial Consultant** (1600) An effective money management system.
- ☐ **Blakbook** (1603) Great for keeping track of addresses and phone numbers. Prints an address book.
- ☐ **Form Letters** (1607) 100 business and legal forms (contracts, employment applications, filings, etc.).
- 2 **PC-Payroll** (1608,1609) A complete and powerful payroll system. (2 disks)
- ☐ **Stock Charting** (1612) A complete stock charting and analysis package.
- ☐ **Small Business Accounting** (1617) A must for all small business owners!
- ☐ **PC-Books** (1621) A complete, easy to use bookkeeping system.
- ☐ **PC-Loans** (1628) This package supports all common loan methods.
- ☐ **Easy Project** (1629) A powerful project manager software package.
- ☐ **FormGen** (1630) Design and print any office form, easily!
- ☐ **Employee Management** (1641) A *shockingly* accurate employee personality test that helps lower turnover.
- ☐ **Biller** (1642) Complete time & billing program. Automates all your billing.

DATABASE/MAIL LIST

- 2 **File Express** (1700,1701) A powerful, easy to use database (2 disks).
- 3 **PC-File 5.0** (1705–1707) The most powerful database program available for under $200! (3 disks) HD 512K
- 2 **CataList** (1711,1712) A professional mail list manager. (2 disks)

SPREADSHEETS

- 3 **PC-Calc+** (1800–1802) The most powerful spreadsheet package for under $200! (3 disks) 512K
- ☐ **As-Easy-As** (1805) FANTASTIC Lotus 1-2-3 compatible spreadsheet.
- ☐ **Lotus Macros** (1807) A large collection of Lotus macros and templates.
- ☐ **On-Side** (1506) Prints your spreadsheet (or any file) sideways!

EDUCATION

- 2 **Spanish I & II** (1205,1206) Test and train with these excellent Spanish vocabulary drills (2 disks).
- ☐ **Geography** (1215) Learning is fun with this great geography trivia game.
- ☐ **Funnels & Buckets** (1219) A fun math learning game that kids love to play!
- ☐ **World** (1221) A computer encyclopedia of global information. CGA
- ☐ **Typing Tutor** (1224) Helps you improve your speed and skill. CGA
- ☐ **Balloon Speller** (1230) An introduction to spelling for children. CGA
- ☐ **Math Lessons** (1233) A great program that teaches algebra. CGA
- ☐ **Facts 50** (1234) A graphic geography lesson of the U.S. CGA
- ☐ **Computer Tutor** (1235) Become a more effective computer user.
- 2 **Presidents** (1240,1241) Learn much about the U.S. Presidents. (2 disks)
- ☐ **School Mom** (1251) Teaches kids (2–14) the basics of art, music, spelling, English and math. FANTASTIC!

WORD PROCESSING

- ☐ **PC-Write Macros** (1850) 100 great macros. For PC-Write users only.
- 3 **PC-Write 3.03** (1851–1853) The BEST word processor for under $200! Complete w/spell checking. (3 disks) 512K
- 3 **PC-Type+** (1870–1872) Complete word processor with 100,000 word dictionary and mail merge. (3 disks)

WORD PERFECT 5.0

- ☐ **WP 5.0 Macros** (1857) Several macros for *Word Perfect 5.0+* users.
- 2 **WP 5.0 Learning Sys.** (1863,1864) Helps you learn to use or become a better *Word Perfect 5.0* user. (2 disks)
- ☐ **ClipArt** (1875,1876) A huge collection of art/graphics for *Word Perfect 5.0+*.
- ☐ **Menus & Mice** (1877,1878) Menu systems and mouse drivers for *WP 5.0+*.

HOME and FAMILY

- ☐ **CheckMate** (1102) A complete checkbook manager. Handles unlimited accounts and does reconciliation.
- ☐ **Home Budget Manager** (1103) Tracks all your household expenses and helps you to set budgets and goals.
- ☐ **Home Inventory** (1105) Keeps track of all your personal property.
- 2 **Brother's Keeper** (1120,1121) A great genealogy program that allows you to trace your family history (2 disks).

GRAPHICS/PRINTING

- ☐ **Banner Maker** (1502) Prints banners in various sizes, styles, and fonts.
- ☐ **PrintShop Graphics** (1503) A large collection of Printshop clip art.
- ☐ **PC-Art** (1509) A color graphics painting/drawing package. CGA
- 2 **Epson Utilities** (1514,1515) Enhance the print quality of your Epson-compatible printer. (2 disks)
- 4 **PC-Key Draw** (1520–1523) Powerful CAD design system. Works with mouse or keyboard. (4 disks) CGA
- ☐ **City Desk** (1525) Simple desktop publishing for newsletters.
- ☐ **Charts Unlimited** (1531) A design tool for creating any kind of chart. CGA
- 2 **PC-Draft** (1533,1534) A high-quality drawing program. (2 disks) CGA
- ☐ **Amazing Labels** (1547) Create and print graphic address labels.

MISC. APPLICATIONS

- ☐ **Bowling League Secretary** (1308) Manages your league and keeps stats.
- ☐ **Personal Biorhythm** (1310) Will display or print a personal chart.
- 2 **KwikStat** (1314,1315) A professional statistics package. (2 disks)
- 4 **Wisdom of the Ages** (1316–1319) Over 6000 great quotations from the greatest minds of history. (4 disks)
- ☐ **Bible-Q** (1551) Test your Biblical IQ!
- ☐ **Church Database** (1554) Automates record keeping for churches.
- 13 **SeedMaster** (1555–1567) The complete King James version of the BIBLE on disk! (13 disks) HD
- ☐ **Make My Day** (1627) Puts you in control by organizing your time!
- ☐ **Piano Man** (1901) Compose and edit music or play the keyboard.

UTILITIES

- ☐ **PC-DeskTeam** (1406) Several useful desktop accessories (clock, calendar, calculator, notepad, etc.).
- ☐ **Automenu** (1409) A very professional hard disk menu system. Run any of your programs from a custom menu.
- ☐ **Space Maker** (1412) This utility allows you to fit more data on any disk.
- ☐ **ALT** (1413) It's like Norton Utilities, the Sidekick desktop accessories, and a menu program all in one!
- ☐ **HD Backup** (1415) Allows you to backup/restore all the data on your hard drive with floppy disks. HD
- ☐ **NewKey** (1416) Save time and increase efficiency by using this (the BEST) keyboard macro program.

GAMES

- ☐ **AdventureWare** (1934) Five excellent adventure games.
- ☐ **Armchair Quarterback** (1905) A fun football strategy game.
- ☐ **Baseball** (1916) Great arcade action and baseball strategy. CGA
- ☐ **Bridge Pal** (1911) Play bridge anytime!
- ☐ **Crime Lab** (1955) Play this exciting graphic murder mystery game. CGA
- ☐ **Ed's Chess** (1919) An excellent chess opponent. It can beat the expensive chess simulators and most people!
- ☐ **18-Hole Miniature Golf** (1915) Kids really love this one! CGA
- ☐ **Flightmare** (1923) Futuristic fighter pilot arcade game. CGA
- ☐ **Kid Games** (1938) These games are both fun and educational. CGA
- ☐ **Kingdom of Kroz** (1952) An excellent, award-winning adventure game.
- ☐ **Las Vegas Style Craps** (1914) Play and improve your skill. CGA
- ☐ **McMurphy's Mansion** (1966) Search a spooky Scottish castle for treasure.
- ☐ **Miramar Flight Simulator** (1967) You command a fully armed F-18. CGA
- ☐ **No Graphics!** (1979) A collection of fun arcade games that don't require graphics. (Works on every system.)
- ☐ **PAC-Man & More!** (1930) PAC-Man and Ms. PAC-Man clones. CGA
- ☐ **PC-Gammon** (1907) Play a tough computer opponent, anytime. CGA
- ☐ **PC-Pro Golf II** (1975) Choose your club and swing away at one of the world's most beautiful country clubs (Amherst). Excellent graphics! CGA
- ☐ **Pinball** (1941) Great sound and fast play on 5 different "machines." CGA
- ☐ **Scrabble** (1957) Test your word power with this always fun game. CGA
- ☐ **Sleuth** (1903) Play detective in this "Who done it?" adventure.
- ☐ **Sports Games** (1927) Bowling, archery, and pool. CGA
- ☐ **Star Trek** (1948) Two versions for all you TREKies out there.
- ☐ **Strategic Games** (1926) Fight on land and sea in this war simulation.
- ☐ **Striker** (1904) Helicopter attack and rescue arcade game. CGA
- ☐ **Tommy's Trivia** (1949) Test your knowledge in several categories.
- ☐ **Tune Trivia** (1968) A very fun version of "Name That Tune."
- ☐ **Video Poker/Ultima 21** (1945) The BEST poker and blackjack games!
- ☐ **Wheel of Misfortune** (1935) Like TV's Wheel of Fortune game.

EGA GAMES

(The following require EGA monitors)

- ☐ **Bass Tour** (1925) An amazing game with excellent graphics. Fish in your choice of lakes. Very realistic. EGA
- ☐ **Captain Comic** (1961) The BEST arcade game ever! Superior graphics! EGA
- ☐ **EGA Arcade** (1965) EGA versions of *Asteroids and Breakout.* EGA
- ☐ **EGA Coloring Book** (1963) A graphically beautiful and easy-to-use coloring program that kids love! EGA
- ☐ **EGA Football** (1928) You call the plays and control the action! EGA
- ☐ **EGA Golf** (1929) A challenging golf game with beautiful graphics. EGA
- ☐ **EGA Star Trek** (1951) You control the Starship Enterprise in this, the ULTIMATE Star Trek game! EGA

IMPORTANT

CGA=Requires Color Computer
HD=Requires Hard Drive
512K=Requires 512K RAM

For multi-disk sets, count all disks in set.

* When you order and pay for 5 or more disks, select an additional 3 disks FREE (limit 3 free disks per order).

Name__________
Address__________
City__________
State_____ Zip_____
Phone (____) ____-____
Visa/MC #____-____-____-____
Exp. Date____/____
Signature__________
Disks Ordered _____ ×$2.49 or $1.99 ea. . . . . . $_____
☐ Need 3½" disks? If so—add $1 per each (including free disks) . . . . $_____
Packing/Handling Charge $ 3.00
Foreign Shipping Charge (Canada $2/Other $4) . . . $_____
☐ COD (U.S. only) add $4 if you require COD$_____
☐ UPS 2-Day Air—add $3 (Continental U.S. only) . . . $_____
TOTAL $_____
☐ Check/MO ☐ Visa/MC ☐ C.O.D.

GOLD HILL SOFTWARE ©

P.O. Box 663
Gold Hill, OR 97525

CPC6

ORDER TODAY
1-800-234-6467

SERVING THE PUBLIC FOR 40 YEARS AND GROWING

MIBRO company inc.

YOUR AUDIO · VIDEO · PHOTO · COMPUTER DEPARTMENT STORE!!

VISIT OUR RETAIL LOCATION AT
64 WEST 36th STREET
NEW YORK CITY, NEW YORK 10018

FOR ORDERS ONLY CALL TOLL FREE

1-800-451-9780

N.Y. RESIDENTS (212) 695-7133

COMPUTER MADNESS

A. "STRICTLY FOR THE STARTERS" COMPUTER OUTFIT

PACKAGE INCLUDES:
•COMPUTER •KEYBOARD •FLOPPY DRIVE •MONOCHROME MONITOR •DISKETTES •SOFTWARE BUNDLE

B. "COMPLETE ALL IN ONE" COMPUTER OUTFIT

PACKAGE INCLUDES:
•COMPUTER •KEYBOARD •DUAL FLOPPY DRIVE •(5¼" - 3½") •MONOCHROME MONITOR •MOUSE •DISKETTES •SOFTWARE BUNDLE

C. "FOR THE SERIOUS NOVICE" COMPUTER OUTFIT

PACKAGE INCLUDES:
•COMPUTER •KEYBOARD •FLOPPY DRIVE •20MB HARD DRIVE •MONOCHROME MONITOR •DISKETTES •SOFTWARE BUNDLE

D. "PACKAGE FOR THE PROFESSIONAL" COMPUTER OUTFIT

PACKAGE INCLUDES:
•COMPUTER •KEYBOARD •DUAL FLOPPY DRIVE •(5¼" - 3½") •40MB HARD DRIVE •VGA COLOR MONITOR •MOUSE •DISKETTES •SOFTWARE BUNDLE

IBM XT COMPATIBLE COMPUTERS

	A.	B.	C.	D.
COMMODORE COLT	$548	$598	$748	$1198
COMMODORE S.E.	$648	$748	$898	$1498
EPSON EQUITY I +	$498	$578	$748	$1498
EPSON EQUITY Ie	$548	$638	$828	$1498
HEADSTART PLUS	$698	$798	$998	$1398
HEADSTART EXPLORER	$698	$798	$998	$1398
HEADSTART II	$698	$748	$898	$1398
HEADSTART LX-CD	CALL	CALL	CALL	CALL
HYUNDAI 16TE	$548	$648	$848	$1498
HYUNDAI 16TX	$548	$648	$848	$1498
IBM XT	$798	$888	$998	$1498
IBM PS II-25	$998	$1198	$1398	—
IBM PS II-30	$1098	$1198	$1498	—
LEADING EDGE Model D	$498	$568	$778	$1298
PREMIER 200	$698	$848	$1038	$1548

IBM AT (286) COMPATIBLE COMPUTERS

	A.	B.	C.	D.
AST BRAVO 286	$798	$898	$1098	$1598
COMMODORE S.E. (286)	CALL	CALL	CALL	$1698
EPSON EQUITY II +	$898	$998	$1198	$1698
EPSON EQUITY IIe	$1098	$1198	$1298	$1798
HEADSTART III	$1588	1688	$1798	$1998
HYUNDAI 286X	$798	$898	$1098	$1598
HYUNDAI 286N	$798	$898	$1098	$1598
IBM AT	$1098	$1238	$1398	$1998
IBM PS II-30/286	$1398	$1498	$1698	—
IBM PS II-50Z	CALL	CALL	CALL	CALL
LEADING EDGE Model D2	$898	$998	$1198	$1698
NEC POWERMATE 286	$998	$1098	$1398	$1798
NEC POWERMATE 286 PLUS	$1348	$1448	$1648	$2048
PACKARD BELL PB-6B6	$898	$998	$1248	$1698
PACKARD BELL PB-800	CALL	CALL	CALL	CALL
PANASONIC FX-1750	$698	$798	$998	$1598
PANASONIC FX-1850	$898	$998	$1298	$1698

IBM AT (386) COMPATIBLE COMPUTERS

	A.	B.	C.	D.
AST BRAVO 386-SX	$1698	$1798	$1998	$2398
EPSON EQUITY 386-SX	$1398	$1498	$1648	$2098
HYUNDAI 386-S	$1048	$1148	$1348	$1898
HYUNDAI 386-C	$1398	$1528	$1698	$2248
NEC 386-SX	$1598	$1698	$1848	$2298
PACKARD BELL 386-SX	$1498	$1598	$1848	$2298
PANASONIC FX-1900	$1098	$1248	$1398	$1848
PANASONIC FX-1950	$1598	$1748	$1898	$2448

PRINTERS

PANASONIC

KXP-1180	$169
KXP-1191	$209
KXP-1124	$279
KXP-1624	$439
KXP-4450	$1299
KXP-4420	CALL

EPSON

LX-810	$179
LQ-510	$319
FX-850	$339
FX-1050	$429
LQ-850	$489
LQ-950	$499
LQ-1050	$679

STAR

NX-1000	$159
NX-1000 color	$209
NX-1500	$309
NX-2410	$279
NX-2415	$389
XR-1500	$419
XR-1000	$329
XR-2410	$419
XR-2415	$549

HEWLETT PACKARD

Desk Jet	CALL
Desk Jet IIP	CALL
Laser Jet II	CALL
Laser Jet III	CALL

MODEMS

1200 Internal	$49
1200 External	$79
2400 Internal	$79
2400 External	$99

LAPTOPS

TOSHIBA

T-1000	$598
T-1000SE	$1098
T-1200/dual drive	$1298
T-1200/20MB	$1798
T-1600/20MB	$3198
T-1600/40MB	$3498

ZENITH

184/dual drive	$998
184/20MB	$1498
286/20MB	$1998
286/40MB	$2498

SHARP

MZ-100	$998
PC-4641	$1798
PC-5541	$2798

MITSUBISHI

286/20MB	$1698
286/40MB	$1998

PACKARD BELL

286/20MB	$1998
286/40MB	$2298

HARD DRIVES

SEAGATE

ST-225 (20MB)	$209
ST-125 (20MB)	$229
ST-238 (30MB)	$209
ST-138 (30MB)	$239
ST-251 (40MB)	$289
ST-251-1 (40MB)	$309
ST-151 (40MB)	CALL
ST-277 (65MB)	$349
ST-4096 (80MB)	$539
ST-4144 (120MB)	$599

COMMODORE

Commodore 64	$129
Commodore 1541	$139
Commodore 1581	$189
Commodore 1802	$189
MPS-1230	CALL
MPS-1660	$29
MPS-1670	$79
MPS-1351	$29
MPS-1764	$119

AMIGA

AMIGA A-500	CALL
AMIGA A-590	$499
AMIGA A-1010	$119
AMIGA A-1084	$299
AMIGA A-1680	$109
AMIGA A-501	$119
AMIGA A-520	$39
AMIGA A-5211	$19

FLOPPY DRIVES

TOSHIBA

360K (5¼")	$69
1.2MB (5¼")	$79
720K (3½")	$69
1.44MB (3½")	$79

PERIPHERALS

mono card	$49
color card	$49
EGA card	$79
VGA card	$99
multi-IO card	$69
serial card	$29
parallel card	$29
game card	$29
clock card	$29
memory card	$69

CO-PROCESSORS

INTEL

8087-5	$89
8087-8	$129
8087-10	$169
80287-8	$199
80287-10	$229
80387-16	$339
80387-20	$389

commodore

COMMODORE 64 25 PIECE STARTERS PACKAGE

Package Includes: Commodore 64 •Commodore 1541 Disc Drive •Monochrome Monitor •Commodore Printer •10 Diskettes •Software Bundle

$298

Commodore

COMMODORE 64 25 PIECE DREAM PACKAGE

Package Includes: Commodore 64 •Commodore 1541 Disc Drive •Color Monitor •10 Diskettes •Software Bundle

$348

commodore

COMMODORE 128-D 25 PIECE STARTERS PACKAGE

Package includes: Commodore 128-D With Built-In 1571 Disc Drive •Monochrome Monitor •Commodore Printer •10 Diskettes •Software Bundle

$398

Commodore

COMMODORE 128-D 25 PIECE DREAM PACKAGE

Package includes: Commodore 128-D With Built-In 1571 Disc Drive •RGB Color Monitor •Commodore Printer •10 Diskettes •Software Bundle

$598

AMIGA
AMIGA 500 25 PIECE STARTERS PACKAGE

Package Includes: Amiga 500 With Built-In Disc Drive •RGB Color Monitor •Mouse •10 Diskettes •Software Bundle

$698

AMIGA
AMIGA 500 25 PIECE DREAM PACKAGE

Package includes: Amiga 500 With Built-In Disc Drive •RGB Color Monitor •Mouse •10 Diskettes •Star NX-1000 Printer

$848

CALL TOLL FREE 1-800-451-9780

NEW YORK STATE RESIDENTS CALL (212) 695-7133
CUSTOMER SERVICE CALL (212) 967-2353 FAX (212) 695-0982
MON.-SAT. 10:00 AM-7:00PM SUNDAYS 10:30AM-6:00PM
ALL SYSTEMS AVAILABLE WITH: 20/30/40/60/80 HARD DRIVES
ALL SYSTEMS AVAILABLE WITH: MGA/CGA/VGA/MULTISCAN

VISA MasterCard

Use M/C, Visa, AMEX, Discover, Diners or send money order, certified checks. All merchandise brand new factory fresh. Shipping charges non-refundable. Minimum shipping and handling $4.95, maximum $59.00. Shipping costs reflect individual packaging. Air shipping additional. for mail orders please call before sending in money order. All prices subject to manufacturers increase/decrease. Refunds within 7 days only with original packaging & unfilled guarantee card. Some products subject to restocking fee. No refunds without prior verbal authorization. Customer Service between 12pm - 6pm. Pictures are for illustration purposes only. Not responsible for typographical errors. Consumer Affairs License No. 800-253. Prices good for mail order only.

Circle Reader Service Number 198

Choose from the BEST!

Exciting Software for IBM PC Compatible Computers

BUSINESS

☐ **As-Easy-As** (4138) Fantastic! A powerful, easy-to-use Lotus 1-2-3 compatible spreadsheet package.

☐ **Small Business Accounting** (4141) A must for all small business owners.

☐ **Solve-It!** (4143) Does over 20 vital financial calculations including amortization, PV, FV, and IRR.

☐ **Biller** (4173) Complete billing system. Keeps track of your receivables and prints invoices and statements.

☐ **Form Master** (4177) Create any business form quickly and easily.

HOME and FAMILY

☐ **CheckMate** (4101) A complete checkbook manager. Handles unlimited accounts and does reconciliation.

☐ **Home Budget Manager** (4103) Helps you to design and stick to a budget.

☐ **Home Inventory** (4180) Keeps a permanent record of all your property.

[2] **Edna's Cookbook** (4217,4218) An electronic cookbook with several recipes—add your own. (2 Disks)

WORD PROCESSING

☐ **Form Letters** (4176) A collection of 100 form letters for all purposes.

[3] **PC-Write 3.03** (4610–4612) All the features you need including spell-checking. The BEST word processor under $200! (3 Disks) 512K

DATABASE/MAIL LIST

☐ **Mail List** (4205) Keeps track of your mailing list and prints mailing labels.

[3] **PC-File 5.0** (4213–4215) This database package is complete, powerful, and dBASE compatible! (3 Disks) Newly updated! 512K HD

GRAPHICS/PRINTING

[2] **Epson Utilities** (4333,4334) A collection of utilities and fonts to enhance your printer's print quality. (2 Disks)

☐ **City Desk** (4340) A simple desktop publishing system for newsletters.

☐ **On-Side** (4387) Prints your spreadsheets (or anything) sideways!

[4] **PC-Key Draw** (4391–4394) Powerful CAD design software system. Works w/keyboard or mouse. (4 disks) HD

☐ **PrintShop Graphics** (4397) A large collection *PrintShop* of clip art.

☐ **Banner Maker** (4801) Make banners of various styles and sizes. Requires an Epson or compatible printer.

EDUCATION

[2] **French I & II** (4500,4501) French vocabulary for students. (2 Disks)

[2] **Spanish I & II** (4505,4506) Spanish vocabulary and verb drills. (2 Disks)

☐ **Algebrax** (4524) Excellent algebra tutor which has different levels for the basic to advanced student. CGA

☐ **Geography** (4526) Make learning fun with this geography trivia game.

☐ **Math Tutor** (4529) A fun approach to learning math. For kids ages 5–13.

☐ **Are You Ready for Calculus?** (4534) This is an excellent pre-calc tutor which reviews algebra and trig.

☐ **World** (4537) A fascinating electronic globe at your fingertips. CGA

FREE
Disk Drive
Cleaning Kit

DISK CARE
DISK CARE

With your order of 7 or more disks from this ad, receive this vital maintenance kit, FREE! A $9.95 value!.

FREE
Disk Holder

In addition to a FREE disk drive cleaning kit, receive this FREE Disk Holder with your order of 20 or more disks. A $12.95 value!

Both items come in your choice of either the 5¼″ or 3½″ size. This offer is good in the U.S. only. (Limit one free of each item per order.)

☐ **Puzzle Search** (4538) An educational game with questions on American history, world history, and geography.

☐ **Typing Tutor** (4550) Quickly improve your typing skills and speed with this friendly typing teacher. CGA

☐ **DOS-a-Matic** (4559) Menu-driven program that makes using DOS easy!

☐ **BASIC Tutor** (4560) Teaches the BASIC programming language.

☐ **Computer Tutor** (4562) If you are a new user or computer novice, this program is WHAT YOU NEED!.

☐ **School Mom** (4567) Lessons on art, math, and spelling for kids. CGA

☐ **Speed Read** (4568) Improve your reading speed and comprehension.

UTILITIES

☐ **Masterkeys** (4300) The disk utilities that everyone NEEDS! Includes file undelete, disk editing, and more!

☐ **SimCGA** (4305) Runs many CGA programs on your monochrome system.

☐ **Tree View** (4347) An amazing DOS shell with pull-down menus.

☐ **HD Menu** (4379) Puts all the programs on your hard disk onto a one-touch selection menu. HD

MISC. APPLICATIONS

☐ **Eliza** (4805) Let the famous computer psychiatrist analyze you!

☐ **Lotto!** (4823) Complete system for most states' lotteries. (Req. printer)

☐ **Astrology** (4831) Let the computer tell you what lies ahead in your stars!

[2] **Brother's Keeper** (4852–4853) A great genealogy program that traces your family roots! (2 disks)

[13] **SeedMaster** (4837–4849) The complete King James *BIBLE* on disk! Allows quick access to any word, phrase, topic. (13 Disks) HD

☐ **Piano Man** (4902) Record, edit, and then play back your favorite tunes. Also lets you turn your computer's keyboard into a musical instrument!

☐ **Video Librarian** (4857) A complete, menu-driven video movie cataloging system with several functions.

☐ **Trip Planner** (4858) A computerized road map. Computes miles and the shortest route between cities.

GAMES

☐ **AdventureWare** (4420) Five challenging text adventures sure to keep you intrigued for several enjoyable hours.

☐ **Checkers** (4459) Think you're good? Can you beat your computer? CGA

☐ **D & D** (4418) Immerse yourself in the ultimate adventure, anytime!

☐ **Ed's Chess** (4427) Challenge a tough computer opponent. Beats the expensive games like ChessMaster 2000!

☐ **18-Hole Miniature Golf** (4414) Kids really love this one! CGA

☐ **Games for Everyone!** (4461) A super collection of arcade games that don't require color or graphics cards—they will work great on ANY system.

☐ **NINJA** (4445) Use your fists, feet, sword, and throwing stars as you battle the evil Ninja warriors. CGA

☐ **PAC-MAN & More!** (4421) Several always fun to play arcade hits. CGA

☐ **PC-JigSaw** (4458) A beautiful picture is displayed and then jumbled into several pieces. See if you can put it together again. FANTASTIC!

☐ **PC-Pro Golf** (4442) Choose your club and swing away at the Amherst Country Club in this video golf game. CGA

☐ **Play 'n' Learn** (4555) Six learning games for pre-schoolers. CGA

☐ **Scrabble** (4460) Test your word power with this always fun game. CGA

☐ **Solitaire** (4428) Five different and enjoyable versions of solitaire. CGA

☐ **SUPER Pinball** (4429) A collection of five great video pinball games. CGA

☐ **Trivia!** (4455) Have hours of fun testing your trivia IQ! For 1–6 players.

☐ **Tune Trivia** (4471) A really fun "Name That Tune" sort of game.

☐ **Video Poker/Ultima21** (4435) You will love these excellent, full-featured poker and blackjack games!

☐ **Wheel of Misfortune** (4422) A really fun version of the popular TV show.

As Low As
$1.49
Per Disk

Why Choose Software Excitement?

That's easy! Only SE! delivers the best quality Public Domain and Shareware software at prices this low; with same-day shipping; easy to use, menu-driven disks; a money-back guarantee to ensure your satisfaction; a polite, knowledgeable technical support staff; free computer accessories with your quantity orders; 24-hour a day/7-day a week toll-free order lines; your choice of programs on the best brand-name color diskettes; a free catalog with more great programs and the lowest prices on blank disks, printer ribbons, and computer accessories; and SO MUCH MORE!

WOW!

To make your experience with this great software just that much more enjoyable and hassle-free, we have installed an easy-to-use selection menu on the disks in our collection. Now all you have to do to have easy access to a program or the instructions is put the disk in your disk drive and type WOW.

Price Chart

Disks Ordered	Price per Disk
1–4	$2.99
5–9	2.49
10–14	2.25
15–24	1.95
25–49	1.75
50 +	1.49

Remember to count each disk in the multiple disk sets and to add 50¢ per disk if you need the 3½″ size.

Name________________

Address________________

City________________

State________Zip________

Phone (_____) _____-_____

Visa/MC: Exp. Date____/____

# ____-____-____-____

Signature________________

Disks _____ × $_____ . . $_____
(See Price Chart)

☐ If you need 3½″ disks—
add 50¢ per each disk . . . $_____

Packing/Handling Charge . $ 3.00

Foreign Shipping Charge
(Canada $2/Other $4) . . . . $_____

☐ COD (U.S. only)
add $4 if you require COD $_____

☐ UPS 2-Day Air—add $3
(Continental U.S. only) . . . $_____

TOTAL $_____

☐ Check/MO ☐ Visa/MC ☐ C.O.D.

Software Excitement!
6475 Crater Lake Hwy.
P.O. Box 3072
Central Point, OR 97502
Orders: 800-444-5457
Information: 503-826-6884
Fax: 503-826-8090

COM6

NEW and EXCITING!

BUSINESS

☐ **Legal Form Letters** (4175) Over 100 forms for contracts, applications, etc.

[2] **ACS In-Control** (4180,4181) A complete system for sales prospecting, lead tracking, and billing. (2 Disks)

☐ **Managing People** (4190) A complete, easy-to-use management training course.

☐ **Power Desk** (4191) Complete business productivity package. Includes a calendar, address database, word processor, and calculator. HD

EDUCATION

☐ **Total Recall** (4570) This program helps you to quickly memorize words, phrases or information on any subject.

☐ **Spell Games** (4571) A spelling game that kids love to play! CGA

☐ **Googol Math** (4573) A math learning system with excellent graphics and several levels of difficulty. CGA

GAMES

☐ **Pinball II** (4434) Five more games that remind you why you love pinball! CGA

[2] **Ford Simulator II** (4467,4468) Test drive your favorite Fords on the race track! (2 Disks) CGA

☐ **Vegas Johnny's Draw Poker** (4472) The best *real* poker game imaginable! Play against up to 6 computer opponents. CGA

☐ **Double Blocks** (4473) A TERRIFIC *Tetris* clone for 1 or 2 players. Records top scores. You will love this game!

☐ **SUPER Arcade I** (4403) A collection of famous arcade games like *Qubert*, *Centipede*, *Pango*, and more! CGA

☐ **SUPER Arcade II** (4408) More arcade favorites. This disk contains clones of *Jump Man*, *Frogger*, and more! CGA

☐ **Space Games** (4464) Try these fun space games including *Space War*, *Flightmare*, and *Defender*. CGA

VISA **1-800-444-5457** MasterCard

CGA=Requires Color Computer
HD=Requires Hard Drive
512K=Requires 512K RAM

Circle Reader Service Number 159

Lyco Computer
Marketing & Consultants

Since 1981

Now get all your computer needs with just one phone call!

HARD DRIVES

Seagate

5.25'' Half Heights:

ST 225 20 Meg 65 MSEC MFM	$189.95
ST 225N 20 meg SCSI	$261.95
ST 238R 30 meg RLL	$199.95
ST 251-I 40meg 28 MSEC MFM	$299.95
ST-277R-1 65 meg 20 msec RLL	$334.95
ST 277N-1 64 meg SCSI	$426.95
ST 296N 84 meg SCSI	$399.95

3.5'':

ST 125 20 meg 40 MSEC MFM	$215.95
ST 125N 20 meg SCSI	$249.95
ST 138R 30 meg RLL	$225.95
ST 138N 30 meg SCSI	$283.95
ST 157R 49 meg RLL	$269.95
ST 157N 48 meg SCSI	$324.95

Controllers available from Western Digital to DTC. Call for pricing.

3.5'' continuation

ST-1096N 80MB SCSI 24 MSEC	$439.95
ST-125A 21MB AT Embedded Int.	$279.95
ST-138A 32MB AT Embedded Int.	$299.95
ST-157A 44MB AT Embedded Int.	$316.95

5.25'' Full Heights:

ST-4096 80 meg 28 MSEC MFM	$539.95
ST-4144R 122 meg 28 MSEC RLL	$599.95

Paired Solutions:
(Drive Plus Controller)

225P 20 meg MFM	$239.95
ST 225 RP 20 meg RLL	$219.95
ST 238 RP 30 meg RLL	$245.95
ST 250 RP 40 meg RLL	$255.95
ST 138 RP 30 meg RLL	$269.95
ST 157 RP 49 meg RLL	$315.95

FLOPPY DRIVES

TOSHIBA

5¼" 360 KB PC/XT Compatible ND-04D	$65.95
5¼" 1.22 MB PC/AT Compatible ND-08DEG	$79.95
3½" 720 KB PC/XT Compatible ND-352	$59.95*
3½" 1.44 MB PC/AT Compatible ND-356T	$79.95*

★ Universal Installation Kit Included.

TAPE BACKUPS

EVEREX

INTERNAL

Excel-40 AT 40 MB	$249.95*
Excel-40 T 40 MB PC/XT/AT	$529.95
Excel-60 60 MB half height 5¼"	$699.95
Excel II-60 60 MB PS/2	$819.95
Excel 150 150 MB	$999.95

**Uses system's floppy controller Not Included.*

EXTERNAL

Excel-40 T40 MB 5MB/min	$599.95
Excel-II 60 T 60 MB 60MB PS/2	$799.95
Excel-60 60MB Full Height 5MB/min	$819.95
Excel 150 150 MB	$1149.95

All tape back-up systems include controller,software and data catridge

PRINTERS

Panasonic

1180	$179.95
1191	$235.95
1124	$289.95
1695	$439.95
1624	$439.95
4450 Laser	$Best Buy

Kodak

Diconix 150+	$339.95

Star

NX-1000 II	$159.95
NX-1000 color	$209.95
NX-1500	$309.95
NX-2410	$275.95
NX-2415	$389.95
XR-1500	$419.95
XR-1000	$329.95
XB-2410	$439.95
XB-2415	$549.95
Laser 8 II	$NEW

Brother

M1724L	$CALL
HR20 Daisy	$319.95
HR40 Daisy	$539.95
M1809	$339.95
M1824L	$449.95
M1909	$429.95
M1924L	$579.95
M2518	$819.95
M4018	$1199.95
HL8ps(Post Script)	$CALL
HL8e	$1699.95

Citizen

120 D	$139.95
120 D Serial	$164.95
180 D	$154.95
GSX-140	$319.95
GSX-140 (COLOR)	$369.95
HSP-500	$309.95
HSP-550	$429.95
Premiere 35	$499.95

Okidata

172	$195.95
182 Turbo	$229.95
183	$219.95
320	$329.95
321	$459.95
390	$459.95
391	$629.95
393	$979.95
393C (color)	$1069.95
Laser 6	$1299.95

Epson

LX-810	$184.95
LQ-510	$319.95
FX-850	$339.95
FX-1050	$439.95
LQ-850	$489.95
LQ-950	$489.95
LQ-1010	$429.95
LQ-1050	$679.95
LQ-2550	$909.95

star

- 180cps draft
- 45 cps NLQ
- 4 resident fonts
- 216 X 240 dpi resolution and print pitches from 3 to 20 dpi

NX-1000 Series II

$159⁹⁵

- 24 pin print head
- 192 cps (draft)
- letter quality text at 63 cps
- push/pull tractor,5 resident print fonts,parallel centronics interface and a standard 6K buffer
- 2-year warranty

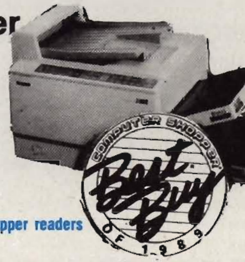
KX-P1124

Panasonic Office Automation OA

$289⁹⁵

Laser Printer

- 512K memory comes standard
- 11 pages per minute print speed
- Panasonic's 1-year warranty



KX-P4450

Price too low to print!

As voted by Computer Shopper readers

MONITORS

Magnavox

CM8702 ColorComp	$179.95
CM8762 RGB	$234.95
9CM-043 EGA	$CALL
9CM-053 EGA	$319.95
9CM-082 VGA	$399.95

GoldStar

2105 A Composite	$74.95
1410 CGA 14"	$209.95
1420 EGA 14"	$319.95
1430 VGA 14"	$349.95

Cardinal Video Cards

Cardinal VGA 200	$139.95
Cardinal VGA 256	$169.95

Emerson

3200 EM 12" Amber TTL	$79.95
1400 EM 14" CGA	$179.95
1405 EM 14" EGA	$299.95
1410 EM 14" VGA	$279.95
1435 EM 14" .31DP VGA	$349.95
1461 SVGA 14" Super VGA	$399.95
1420 EM Multi-Scan	$429.95

Everex Video Cards

Evergraphics Mono	$53.95
MicroEnhancer EGA	$79.95
MicroEnhancer DI EGA PR Portx	$84.95
Viewpoint VGA	$174.95

Emerson

1410EM

- 640x480,720x350 & 720x400
- Analog Input
- Tilt/Swivel Base

$279⁹⁵ VGA

MODEMS

Everex:

Evercom 12 (INT) 1200 Baud	$54.95
Evercom 24 (INT) 2400 Baud	$119.95
Evercom 24 + MNP level 5 2400 Baud	$149.95
Evercom 24E + MNP level 5 2400 Baud	$199.95
Evercom II 24 + PS/2 Int	$189.95

Cardinal:

MB1250 INT 1200 Baud	$49.95
MB1200 EX EXT 1200 Baud	$68.95
MB2450 INT 2400 Baud	$79.95
MB2400EX EXT 2400 Baud	$99.95
MB2250F MNP level 5	$119.95
2450 MNP level 5 INT 2400 baud	$139.95
2400 MNP level 5 EXT 2400 baud	$159.95

Why shop at Lyco Computer? Lyco Computer offers quality nsme brand computer products at prices 30% to 50% below retail. If you do not see the product you want advertised, call Lyco Computer toll free. ***How do I know I will get the product I need?*** Our marketing staff receives continous formal training by our manufacturers. As thousands of people every week capitalize on our savings and services, we hope you too, will make Lyco Computer your first choice. ***What about warranty or service?*** Our Customer Service Department is available at (717) 494-1670 to assist you. We back all of our manufacturer's stated warranty terms. Before returning any item that appears to be defective, we ask that you call our Customer Service Department. ***Will you rush an item to me?*** We offer next day air, two day air, standard UPS, and postal international shipping services. Temporary shortages are normally filled within 10 days. ***How do I order?*** We have always offered C.O.D. orders through UPS. Prepaid cash orders over $50 are shipped freight-free. Simply send your order to Lyco Computer, P.O. Box 5088, Jersey Shore, PA, 17740. For orders under $50, please add $3 for freight. Personal and company checks require a 4 week waiting period. Visa, Master Card and American Express orders are accepted for your convenience, but we cannot pass along the 4% discount offered for cash. Purchase orders are accepted from Educational Institutions. We charge sales tax on deliveries in Pennsylvania. For APO, FPO, and International orders, add $5 plus 3% for priority mail. Prices in this ad reflect cash prices. Advertised prices and availability are subject to change. Not responsible for typographical errors.

Sales: 1-800-233-8760 or 717-494-1030
Fax: 717-494-1441
Hours: Mon.-Fri. 9a.m.-9p.m.
Sat.10a.m.-6p.m.
Customer Service:
717-494-1670
Hours; Mon.-Fri. 9a.m.-5p.m.

VISA

ATTENTION EDUCATIONAL INSTITUTIONS: If you are not currently using our educational service program, please call our representatives for details.

Our friendly sales staff can help with any questions you have!

For Fastest Service Call Toll Free 800-233-8760

Price Guarantee

Since 1981, we have led the industry by continuing to offer the lowest national prices while providing quality service. Many companies have come and gone trying to imitate our quality and service. If by some oversight, we do not have the lowest prices advertised on the products you desire, then we would appreciate the opportunity to rectify this oversight.

WHERE QUALITY COMES FIRST.

IBM PERSONAL SYSTEM II (P/SII)

OSHA Software for Business Industry

Occupation Safety & Health Administration regulations
now available on these IBM systems!

Authorized
Industry
Remarketer

P/SII Model 30....................(30 meg drive)	~~$2255~~
P/SII Model 50 Z ....(30 meg drive)	~~$3250~~
P/SII Model 50.....................(30 meg drive)	~~$3395~~
P/SII Model 60 386 SX/16..(44 meg drive)	~~$5205~~
P/SII Model 70 386/16....... (80 meg drive)	~~$5495~~
P/SII Model 70 386/20 .....(120 meg drive)	~~$7995~~
P/SII Model 70 386/25 .....(120 meg drive)	~~$8995~~

CALL FOR LYCO PRICING!

DTK COMPUTER

Build your own computer with quality components made by DTK Computer. Start with a DTK Barebone system & create your own Computer.

Barebone System Includes: Motherboard, Case & Power Supply

Data 1000 8088 4.77/10MHz	$149.95
Tech 1230C 80286 12/8MHz	$319.95
Keen 2000 80386 20/8MHz	$819.95
Keen 2503 80386 25/10MHz Tower Case 64K Cache	$1299.95*
Keen 3304 80386 33/10MHz Tower Case 64K Cache	$1599.95*

*FCC Class A Approved

Video Cards

Mono/Graphic/Printer	$34.95
Smart VGA 1024x768 Res	$145.95
Advance VGA 512K 16 bit (Everex & Cardinal)	$149.95

Add-on-Cards

PT1-147 XT Multi I/O Parallel, Game & 2 RS-232 Ports, Clock Calendar, & 2 360K Floppy Controller	$44.95
PT1-217 286 Multi I/O Parallel, Game & 2 RS-232 Ports, Floppy Drive Controller,& IDE Interface	$62.95
P11-109 Parallel Printer Port	$15.95

Add-on-Card Continuation

P11-108 RS-232 2 Ports	$22.95
P11-116 Game I/O 2 Ports	$15.95
P11-146 Clock/Calendar W/battery back-up	$22.95
P11-151B Floppy Controller	$35.95
PT1-213 2 MFM Hard Drive/2 Floppy Controller'286	$89.95
PT1-215 2 IDE AT Hard Drive/2 Floppy Controller '286	$42.95

Motherboards

8088 10MHz	$79.95
Mini 286 12MHz	$219.95
Mini 386 20MHz	$719.95
80386 25MHz with 64K Cache	$1099.95
80386 33MHz with 64K Cache	$1399.95

*FCC Class A Approved

Keyboards

Fujitsu 101 key XT/AT Tactile	$59.95

Drives

We sell a full line of Toshiba floppy & Seagate hard drives.

MANUFACTUERER	XT	286	386SX	386
LASER	TURBO II $\$379^{95}$	286/2 $\$589^{95}$	LX 386SX $\$819^{95}$	LX 386 $\$1599^{95}$
PANASONIC	FX-1650 $\$499^{95}$	FX-1850 $\$929^{95}$	FX-1900 $\$1249^{95}$	FX-1950 $\$1999^{95}$
EMERSON	8000EC $\$549^{95}$	8286ECV $\$949^{95}$	8386EC $\$1049^{95}$	—
DTK	*DATA 1000 $\$149^{95}$	*Tech 1230C $\$319^{95}$	—	*Keen 2503 $\$1289^{95}$

*Barebone System

LAPTOPS TO GO!

TOSHIBA C88/4.77 MHz

"Pick up on the T1000 and you'll go far. Give yourself desktop PC power wherever you need it at a mere 6.4 pounds!"

Standard Features Include

- 80C88 Processor 4.77MHz
- 512K RAM
- 3.5" 720K Disk Drive
- Real time clock/calendar
- Toshiba Super-Twist LCD display (80x25)
- Parallel, serial and external 5.25 drive ports
- AC adapter/battery charger

EXTRA FEATURES FREE

✓ MS-DOS 2.11 in ROM	INCLUDED
✓ AC adapter/battery charger	INCLUDED

T1000 $\$639^{95}$

Laser Turbo II 8088/10 MHz

"..Everything you expect from a 8086 CPU plus powerful features."

Standard Features Include

- 8088-1 Microprocessor (4.77/10)
- 150 watt power supply
- 4 drive bays/exposed
- 102 Key enhanced keyboard
- 1 360K 5.25" floppy drive
- 8 expansion slots
- Parallel, serial, game ports

EXTRA FEATURES FREE

✓ CGA/MDA, Composite video adaptor	$99 VALUE
✓ 640K RAM (not just 512K)	$80 VALUE
✓ PC TOOLS DELUXE (#1 rated desk-top organizer)	$129 VALUE
✓ MS-DOS G/W Basic 4.01	$99 VALUE
✓ One-Year warranty (parts and labor)	INCLUDED

$\$379^{95}$ *Starter System*

Turbo II	VIDEO OPTIONS (Includes monitor & display card)			
Drive Options	MONO	CGA	EGA	VGA
1 Floppy 3.5	$449	$589	$769	$879
*Dual Floppy	$529	$669	$839	$959
40MB Seagate	$749	$879	$1059	$1169

* Second drive Toshiba 3.5" or 5.25" Floppy drive

TOSHIBA

LAPTOPS

T1000	$639.95
T1000SE	$1159.95
T1600 W/20MB HD	$2999.95
T1600 W/40MB HD	$3295.95
T3200	$3399.95
T3200SX	$3949.95
T5200 W/40MB HD	$4899.95
T5200 W/100MB HD	$5299.95

BONDWELL

LAPTOPS

B200 W/Dual Floppy	$789.95
B310 W/40MBHD	$2099.95

MITSUBISHI

LAPTOPS

MP286L-210 W/Dual Floppys	$1379.95
MP286L-220 W/20MB HD	$1849.95
MP286L-240E	$234995

EMERSON 8286ECV 286/16MHz

"You know the name. Emerson means quality, reliability and affordability. Now Emerson brings home more technology: Emerson 8286ECV computer."

Standard Features Include

- A powerful 80286 processor operating at 16MH
- 3 16 bit I/O expansion slots
- 1 5¼" 1.2MB floppy drive with controller for optional second 3½" or 5¼" floppy drive included
- 1MB of memory, expandable to 4MB on motherboard
- VGA video controller built-in
- High performance IDE hard drive connector with up to 110MB support
- Socket for the 80287 math co-processor
- 2 RS232 9-pin serial interface ports
- 1 parallel printer port
- Mouse port
- A real time clock/calender with battery back-up
- Phoenix BIOS with 128K ROM
- Sculptured 101 AT keyboard
- MS-DOS 3.3 and Borland Turbo Basic Compiler
- Emerson's software package contains the Emerson Menu Program with Calendar, Calculator, Utility and File Management functions; Professional Write Word Processing; CHECKFREE Home Accounting Management & QUATTRO Spreadsheet by Borland

$\$949^{95}$ *Starter System*

TOSHIBA C86/9.54MHz

"For the traveling and field professionals whose work requires a truly functional notebook-sized PC."

Standard Features Include

- 80C86 Processor 9.54 MHz
- 1 MB RAM
- 1 1.44MB floppy disk
- Weighs only 5.9 lbs.
- removeable rechargeable battery pack
- Backlit Super-twist LCD
- Real time clock/calendar
- Integrated numeric keypad
- 1 parallel and 1 serial port
- RGB/Composite monitor ports

EXTRA FEATURES FREE

✓ MS-DOS 3.2	INCLUDED
✓ Universal AC power adapter	INCLUDED
✓ 1 year warranty (no cost)	INCLUDED

T1000SE 1159^{95}

DTK Keen 2503 80386/25MHz

Tower with 64K Cache

Standard Features Include

- Microprocessor: 80386-25
- Coprocessor: 80387/Weitec 3167
- Clock speed: 25/10MHz
- 64KB/256KB/8MB on board expansible to 16MB if use of PEI 305 RAM card
- BIOS: Pheonix
- 64K Cache
- 6 layer PCB
- Expansion: 32-bit x 1, 16-bit x 6,8-bit x 2
- Performance
  - -Landmark: 43.5
  - -Norton SI: 32
  - -MIPS: 6.2
- 200 Watt Power Supply
- 115/230V-50/60 Hz
- Tower Cabinet
- Driver Bays:
  - -Outer: 5.25" X 3
  - - Inner: 5.25" X 2

$\$1289^{95}$

Starter System

MITSUBISHI 286/8&12 MHz

"At last, a laptop machine that doesn't compromise on readability, speed, power or expandability."

Standard Features Include

- 80286 Processor 8/12 MHz
- 640K RAM
- 11" Paper white display with backlighting
- CGA/Hercules adapter
- 1.44 MB/720K floppy drive
- Real time clock/calendar
- 1 Parallel, 2 serial ports
- 4 expansion card slots
- Internal speaker

EXTRA FEATURES FREE

✓ MS-DOS/GW Basic	INCLUDED
✓ MP 286L diagnostics routines	INCLUDED
✓ 20 MB hard drive	INCLUDED
✓ Key pad, external drive ports	INCLUDED

MP 286L

$\$1849^{95}$

Laser LX 386SX 386SX/16MHz

"One of the most affordable ways to enter the powerful world of 386 computing at a 286 price.

Standard Features Include

- High Performance 16MHz 80386SX Processor with Zero Wait State
- 1MB RAM Built In, Expandable To 2MB On Motherboard
- 5¼" 1.2MB Floppy
- Add In Up To 6MB Of High Speed, Zero Wait RAM
- 7 Expansion slots (All 16 Bit)
- Parallel Port, 9-Pin and 25-Pin Serial Ports Optional Game Port
- 102 Key Enhanced Keyboard
- 200 Watt Power Supply
- Microsoft OS/2® Ready

$\$819^{95}$ *Starter System*

Includes MS DOS/GW Basic 4.01

LX 386SX	VIDEO OPTIONS (Includes monitor & display card)			
Drive Options	MONO	VGA mono	EGA	VGA color
40MB Seagate	$1399	$1549	$1669	$1779
60MB Seagate	$1459	$1599	$1719	$1829
84MB Seagate	$1499	$1639	[illegible]	$1869

Circle Reader Service Number 179

NEW PRODUCTS

LIZ CASEY AND MICKEY McLEAN

100 Percent

Two educational packages from Gamco Industries, *Percent* and *Percent Word Problems,* teach students about percentages. *Percent's* first lesson contains six drills on converting fractions and decimals, percents greater than 100, and percents with one or two decimal places. The second lesson offers practice in finding a percent of a number, finding the number when the percent is known, and mixed drills. Students have access to help screens at each level except review.

With *Percent Word Problems,* students can choose from five different lessons, including two-step problems and find the percent. Teachers and parents can control the difficulty level so the student focuses on the word problem and not the calculations.

Both packages are available on 5¼- and 3½-inch disks for the IBM PC and compatibles, Apple II series, and Commodore 64/128. All versions retail for $44.95 each.

Gamco Industries, P.O. Box 1911, Big Spring, TX 79721

Reader Service Number 200.

Travels with Jack

Accolade has released the third in a series of golf simulations created in association with Jack Nicklaus Productions. *Jack Nicklaus Presents the International Course Disk* is a supplementary disk to Accolade's *Jack Nicklaus' Greatest 18 Holes of Major Championship Golf.* The company's first add-on course disk was *Jack Nicklaus Presents the Major Championship Courses of 1989,* released last year.

The new collection offers computer golfers the opportunity to play on three simulated courses based on championship layouts designed by Nicklaus in Australia, Japan, and England.

The Australian Golf Club in Kensington, the frequent site of the Australian Open, is the oldest and one of the toughest courses in Australia. Saint Creek Golf Club in Nagoya, Japan, one of Nicklaus's more recent design projects, just opened in October 1989. St. Mellion Golf and Country Club in Cornwall, England—an American-style championship layout with streams, lakes, undulating fairways, and large, fast greens—opened in 1986.

The IBM PC and compatibles version of *Jack Nicklaus Presents the International Course Disk* has a suggested retail price of $21.95. Versions for the Apple IIGS, Commodore 64, Amiga, and Macintosh are scheduled for release later this year.

Accolade, 550 S. Winchester Blvd., Suite 200, San Jose, CA 95128

Reader Service Number 201.

Winning the War—Again

Revolution'76 from Britannica Software takes you back to 1776 and the beginnings of the American Revolution. You must compel the British leaders to concede defeat even though the redcoat forces far surpass your own colonial forces.

This historical simulation presents you with the same problems the American revolutionaries faced, including selecting generals, raising and maintaining an army, keeping troops united, and planning strategies to defeat the British. It also tests your diplomatic skills as you try to develop European allies without entwining the colonies in European politics.

Revolution'76, developed for age 11 and older, is available for the IBM PC and compatibles with 640K and for the Apple IIGS. Each version retails for $49.95.

Britannica Software, 345 Fourth St., San Francisco, CA 94107

Reader Service Number 202.

Notebook Power

Toshiba has introduced the 80C286-based 7.9-pound T1200XE notebook-size personal computer. The T1200XE features 12-MHz clock speed, a 20MB hard drive, a 1.44MB· 3½-inch floppy drive, and one megabyte of RAM expandable to five megabytes.

Its 25-millisecond hard drive and PS/2-compatible floppy disk drive reads and writes both 1.44MB and 720K formats. The blue-on-white side-lit supertwist liquid crystal display has 640 × 400 double-scan CGA compatibility and measures 7¾ × 4⅞ inches. The full-function 82-key keyboard has 12 function keys and 8 dedicated cursor-control keys.

The 80C286-based T1200XE is Toshiba's most powerful notebook-size PC.

The battery-operated T1200XE comes equipped with a 12-ounce removable nickel-cadmium battery that recharges in three hours. A nonremovable nickel-cadmium battery backs up system memory. Battery-conservation features include a sleep mode and a user-designated hard drive and display shutdown, which goes into effect after a period of keyboard inactivity.

Other features include serial, parallel, RGB, external 5¼-inch floppy drive, and keypad ports. Options include 2MB memory cards, an internal 2400-baud modem, a 17-key numeric keypad, a battery pack, a three-pack battery recharger, an auto adapter, and a carrying case.

The T1200XE comes with MS-DOS 4.01 and the PC Kwik Power Pak. It also has a hypertext online disk-resident T1200XE reference and an MS-DOS 4.01 manual. ▹

Sensational PC Software SALE

$2 39 Per Disk 10 or More

$2 89 Per Disk Less than 10

Great Public Domain and Shareware Programs for IBM and Compatibles
Laboratory Certified – Virus Free • Latest Updates • Fast, Fast Delivery

Featuring: MORE...MORE...MORE......PROGRAMS PER DISK

PRINTING

AMAZING LABELS (1647) NEW! Create exciting graphic address labels.

FORM DESIGNER (112) Easy, powerful program creates custom forms.

LETTERHEADS PLUS (132) Design/print custom letterheads, envelopes, labels to Epson/IBM compatible printers.

ON-SIDE (121) New! Print sideways with custom fonts. Menu-driven.

CITYDESK (123) Desktop publishing for 2 column newsletters.

MR. LABEL (124) Most versatile & powerful label printing program.

ADDRESS-O-MATIC (127) Grabs names and addresses from letters and automatically prints envelopes.

IMAGEPRINT (128) Remarkable letter quality printing on a 9 pin dot matrix printer.

BANNER MAKER (130) Create signs and banners with multiple fonts & styles.

GAMES

WORDS•WORDS (200) NEW! Word puzzle game uses 6,000 words. Challenging!

BATTLE GROUND (286) NEW! Terrific strategic war game. Great graphics. CGA.

FORD SIMULATOR II (280, 281) (2 disks) NEW! Exciting new driving simulator from Ford Motor Co. Lots of options.

FACING THE EMPIRE (290) NEW! Great intergalactic adventure game.

RETURN TO KROZ (291) Unique arcade-adventure game. Sequel to prize-winning Kingdom of Kroz.

PINBALL ART (295) NEW! Fast-paced high-quality pinball games. Requires CGA.

CRIME LAB (279) Great, unique graphic murder mystery game. CGA or EGA.

CAPTAIN COMIC (260) Commercial quality arcade game. Excellent! EGA or VGA.

DRACULA IN LONDON (271) Super graphics adventure game. Great fun. CGA or EGA.

NINJA (201) Commercial quality karate arcade game. Neat graphics. CGA, EGA.

3-D CHESS (205) Superb 3-D game. Loaded with options. Use w/any graphics card.

PC-RAILROAD (210) Trains run on ready-made routes or design your own. You have total control. CGA required.

CARD GAMES (214) Draw Poker, Hearts, Canasta and Bridge.

ARCADE GAMES #5 (220) Rockets, Snake, Xonix, Nemon, Spacewar. Needs CGA.

FAVORITE GAMES (221) Pango, Qbert, Frogger, Packman, 3-Demon. CGA.

GAMBLING GAMES (229) Blackjack, Poker, Roulette, Craps. CGA required.

BOARD GAMES #1 (230) Monopoly and Risk. Requires CGA.

EGA ARCADE GAMES #1 (251) Aldo, EgaBreakout, Egaroids. Needs EGA.

EGA ARCADE GAMES #2 (252) Snarfs and Ega-Star Trek. Requires EGA.

BOARD GAMES #3 (245) Scrabble, Concentration, Boris, Seek & Sink. Needs color monitor.

MAJOR LEAGUE BASEBALL (203) Super baseball game. Neat graphics. CGA.

EGA GOLF (250) 18 holes of the best scenery available. Requires EGA.

SIMBASE (206, 207) (2 disks) Great baseball simulation with detailed analysis.

BASS TOUR (258) New! Feature-packed fishing game. Select rod, reel, bait, everything. Needs CGA or EGA.

BOARD GAMES #2 (231) Checkers, Chess, Dominoes, Backgammon. Needs CGA.

ADVENTURE GAMES #2 (246) Empire & McMurphy's Mansion.

STRATEGIC WAR GAMES (226) War on the Sea, Tank & African Desert Campaign.

ARCADE SPORTS GAMES (223) PC-Pool, PC-Bowl & Archery. CGA or EGA..

ARCADE GAMES #1 (216) Spiders, Tank Wars & Disk Crash. Requires CGA.

EGA FOOTBALL (257) New! You control all the great action. Plays like a real football game. Needs EGA.

UTILITIES

VIRUSCAN (403) NEW! Best, easiest virus protection. Updated to catch new virus.

NEWSPACE (410) NEW! Was commercial. Terrific automatic hard disk space saver.

DBS-KAT (425) NEW! Great disk cataloging system w/no data entry. 384K, DOS 3.0 + .

SCREEN CAPTURE (445) NEW! Capture screens in CGA, EGA, VGA & save to disk.

PC-BROWSE (492) NEW! Incredible file & text search from makers of PC-Write. Hypertext, Cut/Paste, much more. 640K.

LIST (417) Read text files on screen. All-time best!

BATCH FILE MENUING (419) Easily add professional menus to batch files.

BAKER'S DOZEN (406) Powerful package of 14 utilities from Jim Button. Top rated .

CGA SIMULATOR (433) Run most CGA programs on Hercules compatible monochrome cards.

HARD DISK UTILITIES (437) Very useful.

MENUS and DESKTOP

POWER DESK (606) NEW! Superb desktop manager & complete office system.

POWER MENU (702) Excellent, easy menuing program. Needs hard disk.

TREEVIEW (706) New! Our favorite DOS command shell with pull down menus.

WORD PROCESSING

HELPPERFECT (801) for 5.0, **(802)** for 4.1 & 4.2. NEW! Incredible must-have WordPerfect utility. Pull-down menus with 70 commands.

WORDPERFECT 5.0 TOOLS (841) ASCII to WP5 format converter plus other super utilities to improve performance.

PC-WRITE 3.03 (809-811) (3 disks) New! Top rated w/spell checker.

WORDPERFECT CLIPART (843, 844) (2 disks) Over 180 great graphics.

PRO-SCRIBE (822) New! Really improves impact and clarity of your writing.

WORDPERFECT MACROS (831) for 5.0, **(837)** for 4.2. 70 great macros templates.

SPREADSHEET

AS EASY AS 4.0 (902) NEW! Great Lotus 123 clone. Latest with 8,192x256 grid. Does almost every Lotus function.

QUBECALC (903) Unique, powerful 3-D spreadsheet. View data as never before.

LOTUS TEMPLATES (907) Ready to run. Requires Lotus 123.

LOTUS MACROS (908) Saves loads of time. Requires Lotus 123.

123 POWER WORKSHEETS (911-912) (2 disks) 13 great worksheets for Lotus.

DATABASE

dLITE (1031) Amazing dBASE multi-utility incl. cut & paste, and much more.

FILE EXPRESS 4.xx (1002-1003) (2 disks) Easy, powerful database. PC-Magazine said it "performs like a thoroughbred."

THOUGHT ORGANIZER (1013) Text based database organizes data and thoughts.

dPROG (1022) Fantastic dBASE III auto-programmer writes all codes for you.

WAMPUM (1006, 1007) (2 disks) Superb, full-featured dBASE III clone. Requires 512K, hard disk.

dFLIPPER (1025) New! Directly edit dBASE & compatible files from DOS.

PC-FILE + 2.0 (1009-1011) (3 disks) Jim Button's relational database masterpiece.

CREATIVITY

CREATIVITY PACKAGE (3000-3002) (3 disks) Unique, 3-phase pkg. Computer brainstorming unleashes your creativity.

IDEA TREE (3003) Unique thinking tool & info manager. Gain control of thoughts with graphic display of ideas. Top honors.

PROGRAMMING

ADVBAS (1413) Best Basic programming aid. Advanced function library, windows.

A86 and D86 (1403-1404) (2 disks) Finest macro assembler & debugger. Fast!

EBL & OPAL (1407) Two fantastic batch language processors. Super-charge your batch files.

GRAPHICS

ICONVERT (1600) NEW! Powerful graphics file converter. Converts between 16 formats. Needs graphics, 2 floppies or hard disk.

PC-KEY DRAW (1607-1609) (3 disks) Powerful drawing/CAD program with clip art. CGA, EGA, or HERC w/CGA emulation.

FINGER PAINT (1620) Like PC-Paint brush. Requires graphics card.

VGA PAINT (1622) New! Graphics/drawing in 248 colors. Requires VGA, 450K.

PRINTMASTER GRAPHICS (1602, 1603) (2 disks) 1,000 great graphics for Printmaster.

PRINT SHOP GRAPHICS (1663, 1664) (2 disks) New! 1,000 graphics for Print Shop.

HOUSEHOLD

A›RECIPES (1831) NEW! Computer chef with loads of delicious recipes.

PC-BARTENDER (1823) Professionally mix almost any drink.

GARDERNER'S ASSISTANT (1809) Plan your garden in every detail.

VIDEO LIBRARIAN (1812) Catalogs your video tape library. Menu-driven.

SHOPPERS ASSISTANT (1816) Easy grocery shopping and coupon filer.

Call Toll Free for 800-359-9998
SAME DAY SHIPPING Orders Only & Free Catalog

CIRCLE DISK NOS. OR SEND ORDER ON SEPARATE SHEET OF PAPER.

Name ______________________________
Address ______________________________
City/State/Zip ______________________________
No. of disks____ x $2.89 ea. (Pay for ea. disk in multiple disk sets) = ________
($2.39 each 10 or more disks)
3.5" disks - add $1 ea. = ________
CA residents add 6.75% sales tax = ________
Shipping and handling = $3.50
Total = ________
Check disk size: 5¼"________ 3½"________
VISA/MC # ______________________ EXP. DATE________

Checks, Money Orders, VISA/MC, COD Accepted (Add $4 for COD)

The Software Labs
3767 Overland Ave. #112 Los Angeles, CA 90034 (213) 559-5456

Immediate pick-up for WALK-IN customers

CPU690

EDUCATION & TUTORIALS

TOTAL RECALL (327) NEW! Helps you memorize any subject. Requires 448K.

AMERICAN STATES (338, 339) (2 disks) NEW! Great U.S. States education.

TOUCH TYPE TUTOR (300) NEW! Superb interactive typing instructor.

WORDPERFECT LEARNING SYSTEM (353, 354) for 4.2. **(355, 356)** for 5.0.

COMPUTOR TUTOR (302) Complete interactive DOS and computer tutorial.

EASY DOS (305) Two great programs make using DOS very easy.

SPANISH TUTOR (351) 3 powerful programs to help you learn Spanish.

COMMUNICATIONS

PRIVATE ACCESS (1718) NEW! Connects PC to answering & FAX machines, & pagers.

PROCOMM (1700, 1701) (2 disks) Newest. All features, menu-driven. Top rated.

BUSINESS & FINANCE

POSTAL CONSULTANT (8934) NEW! Computerized U.S. Postal rules guide.

FREIGHT + (8904, 8905) (2 disks) NEW! Top rated commercial UPS shipping system. Complete, fully functional. Requires DOS 3.0 + , 380K, hard disk.

FINANCE MANAGER II (8917-8922) (6 disks) NEW! Best business accounting. G/L, A/P, A/R, Payroll. 2 floppies or hard disk.

ACTIVE LIFE (509, 510) (2 disks) NEW! Best ever appointment/scheduling program. Unique features in a graphic interface. Needs graphics monitor, 512K, hard disk.

MASS APPEAL (1963) NEW! Complete powerful mail list manager. Requires 512K, 2 floppies or hard disk.

AREA CODE FINDER (1962) Quickly finds US & foreign area codes.

RENTALS (1951) Fast, powerful property management. Menu-driven, easy to use. Requires 420K, 2 floppies or hard disk.

ZIP CODE FINDER (1900) New! Computerized zip code book. Ultra fast search.

FASTBUCKS (1903) Fast, easy, home finance package. Needs graphics card.

SOLVE-IT! (1919) 29 menu-driven financial calculations.

EXPRESS CHECK (1922) New! Great check book mgr. Menu-driven, prints checks and reports.

EASY PROJECT (1932) Total project manager. Gantt charts, reports.

ASC IN-CONTROL (1952, 1953) (2 Disks) Sales prospecing/tracking, billing, scheduling, auto-dial, labels.

FONE (1954) New! Price your phone calls while you're on the line & save money.

BUSINESS FORM LETTERS (1936) 100 common business letters. Fill in blanks.

MISCELLANEOUS

TRIP PLANNER (1305) NEW! Fantastic computerized U.S. roadchart. Finds shortest routes, much more!

COLLEGE PROBE (304) NEW! A wealth of info helps you select best college.

ELECTRONIC ALMANAC (2700) NEW! Hundreds of traditional features.

JORJ (331, 332) (2 disks) NEW! Extraordinary phonetic English dictionary. Powerful, unique features. Needs hard disk.

MICRO WORLD DATA BANK (2608-2612) (5 disks) Ultra detailed world mapping. Produced by the CIA. Needs CGA or EGA. Features 2 types of mapping.

PIANOMAN 4.0 (2202) Play and compose music. New update is better than ever.

WORLD (2600) Stunning! Feature-packed world map w/zoom. Needs CGA or EGA.

ASTROLOGY 9.5 (2701) Complete, accurate chart calculation.

LOTTO BUSTER (2130) Lottery program really works on any pick-6/pick-7 lottery.

WISDOM OF THE AGES (1216-1218) (3 disks) New! 6500 quotes on 81 subjects from history's greatest minds.

Circle Reader Service Number 142

The suggested retail price of the T1200XE is $3,999.

Toshiba America Information Systems, Computer Systems Division, 9740 Irvine Blvd., Irvine, CA 92718

Reader Service Number 203.

Making a Clean Sweep

Curtis Manufacturing offers a series of computer cleaning products designed to keep your computer components free from dirt, dust, and potentially damaging static buildup.

The Curtis Clean Drive, available for 5¼- and 3½-inch disk drives, features a drive-cleaning disk and 15 single-application head-cleaning solution packets. It removes dust, oxide deposits, and other debris and helps prevent read/write errors and breakdowns. Curtis recommends that you use Clean Drive once a week for 30–45 seconds. It retails for $9.95.

With the Curtis Clean Screen, you can prevent data-threatening static discharge. The kit comes with eight single-application wet towels, eight single-application dry towels, and one large, reusable towel. The cleaning system can be used on normal or coated monitors as well as on glass or mesh glare filters. Clean Screen can also dissipate static from facsimile machines, copiers, and keyboards. It retails for $5.95.

Curtis Manufacturing, 30 Fitzgerald Dr., Jaffrey, NH 03452

Reader Service Number 204.

AD & D Roundtable

GEnie, an online consumer information service, is now offering the TSR Online Roundtable. TSR is one of the world's leading publishers of role-playing games and products, including Advanced Dungeons & Dragons.

In addition to getting information and news about the AD & D game, GEnie subscribers will be able to take part in live gaming, enroll in the Role-Playing Gamers Association, purchase TSR products through an online catalog, and participate in regular online classes on role-playing and dungeon-mastering.

Regular features on the Roundtable will include RPGA network events, *DRAGON* magazine articles available for downloading, previews of upcoming TSR novels, regular conferences and interviews with TSR game designers, up-to-the-minute information on gaming conventions and events around the world, and the opportunity to ask questions about any TSR product. TSR licensees such as Strategic Simulations will also offer information on the service.

For more information about the GEnie service, call (800) 638-9636.

GEnie, GE Information Services, 401 N. Washington St., Rockville, MD 20850

Reader Service Number 205.

New Campaign

Dynamix has released *Simulation Module #1* for its flight simulator, *A-10: Tank Killer.* The module adds seven new missions that can be played individually or back to back in a campaign.

Simulation Module #1 is available only from Dynamix for $12.95. The package also includes an embroidered Flying Tigers patch as well as mission hints and tips. Orders can be placed by calling the Dynamix Ordering and Technical Support line at (503) 687-8690. The module is also available on the Dynamix Bulletin Board. Modem owners can call the BBS at (503) 687-8497.

Dynamix, 99 W. 10th, Suite 337, Eugene, OR 97401

Reader Service Number 206.

Good Investment

The CompuServe Information Service has recently added two personal-investment services accessible by your personal computer and modem.

VESTOR, a weekly updated stock-analysis service, provides buy/sell recommendations on more than 6000 individual companies. Also, you can screen the information database for investment opportunities. By entering ticker symbols, you can obtain a computer-generated forecast of expected performance of stocks. It also identifies stocks to buy or sell based on financial criteria you enter.

RateGram lists the highest returns available on federally insured certificates of deposit, money-market rate-paying accounts, and money-market funds. Also updated weekly, RateGram reports on liquid money-market accounts, small- and minimum-balance CDs and jumbo CDs, mortgage rates, and taxable and tax-free money-market funds. Reports display the name, address, and phone number of the institution along with the required minimum deposit, frequency of interest compounding, stated interest rate, and other indicators.

VESTOR, provided by Investment Technologies, charges $15.00 per hour over and above normal CompuServe connect charges of $12.80 per hour. RateGram is a service of the Bradshaw Financial Network and is available for a $1.00 surcharge per report plus CompuServe's connect charges.

In addition to VESTOR and RateGram, CompuServe offers up-to-date stock-market quotes; information on mutual funds, options, commodities, and bonds; online discount brokering; and financial news.

CompuServe, 5000 Arlington Centre Blvd., P.O. Box 20212, Columbus, OH 43220

Reader Service Number 207.

Classic Storyteller

The Milliken Storyteller brings new life to classic children's stories such as *Henny Penny, The Ugly Duckling,* and *Little Red Riding Hood* by taking advantage of the sound capabilities of the Tandy 1000 and Covox-equipped IBM PCs and compatibles.

Each story is read aloud with a real human voice, and animation is used to bring each illustrated character to life. The program also contains activities such as comprehension questions and coloring screens.

The Milliken Story Collection II will soon be available and will contain *Jack & the Beanstalk, Aladdin & the Magic Lamp,* and *Peter Rabbit.*

The Tandy 1000 version has a suggested retail price of $44.95. The IBM PC and compatibles version comes with Covox speech hardware and sells for $69.95. Both versions require at least 384K of RAM and support EGA, CGA, VGA, and Hercules monochrome graphics. If you own an IBM PC or compatible already equipped with Covox speech hardware, you should purchase the Tandy 1000 version.

Milliken Publishing, 1100 Research Blvd., St. Louis, MO 63132

Reader Service Number 208.

Table Strategy

MicroAce Blackjack offers something for the blackjack beginner as well as the seasoned player. The program, both a game and tutorial, illustrates different blackjack strategies developed by Julian Braun. Play for fun or to improve your blackjack skills.

The program features six pop-up strategy tables, strategies for basic single- and multiple-deck play, advanced single- and multiple-deck play, player/dealer odds calculations, strategy practice drills, and card-counting practice.

MicroAce Blackjack requires 256K and retails for $49.95.

MicroAce, P.O. Box 5223, Englewood, CO 80155

Reader Service Number 209. ◻

OFF LINE

IT'S A SIGN OF THE TIMES

DAN GOOKIN

As with all things in this universe, your PC has cycles. (People have cycles, too: When we're young, they're tricycles, and later they're bicycles. As we get older, they become mood cycles—nasty habits and violent outbursts we privately relish but publicly blame on beverages such as beer and coffee.)

One of the most popular means of tracking these cycles is the zodiac. Created by the Romans, the zodiac gives fanciful names to the months of the year. The Romans ascribed a special sign to each month, which was a much more successful method than that employed by the ancient Zaldavians, who named each of their 12 months *Moon.*

It's said that a child born under a specific sign will show traits related to that sign. But researchers have always asserted that if children are born under any sign, it's the one called Tantrum. What hasn't been disproved by scientific circles is how the zodiac influences your computer. To further aid enlightenment, I offer an astrological calendar for the Information Age, along with a hint of what you can expect this month.

Aries. Aries is the sign of your PC's memory. It's also the sign of the TSR (memory-resident) software craze, which was born with the crowded house rising toward 640K. For June: Be patient. That flashing *MEM* light is only temporary. OS/2 looms.

Taurus. Taurus is associated with computer manuals and documentation. It's also the birth month for shrink-wrap, discovered by a 3M chemist who got bored one day while playing with Saran Wrap, his wife's hair dryer, and the family cat. For June: A relative from out of town will visit. Stop her before she puts the Melba toast into your disk drive.

Gemini. Gemini is the duplex sign of the modem and all data communications. Always the social sign, Gemini lends itself well to the land of the electronic BBS. It's also the best month for a 14-year-old to think of a handle other than Dr. Death. For June: A second PC will come into your life and bring you much happiness. But along with the happiness will come financial burden and a need to buy a new disk format.

Cancer. Cancer, the crab, walks sideways even though its eyes and defensive claws point forward. The Cancer sign rules those people who walk around in huge discount warehouses and look at the stuff on the shelves instead of where they're going. For June: Nothing much going on.

Leo. Leo governs your power supply. It may purr like a kitten now, but when it dies, it's a lion, with popping and a lot of blue smoke. For June: Take that vacation. Buy an extension cord and put the PC on the patio.

Virgo. Virgo is the virgin. (Originally, the Roman month of Tarto followed Virgo.) Most people desiring to build their own computers do so at this time of year. For June: A long-term financial obligation and debt will vanish this month—until you get your VISA bill for all that mail-order software you bought under Leo.

Libra. Libra is the sign for harmony, for the balance of opposing forces. You'll often find a copy of COMMAND.COM in every subdirectory on a Libra's hard drive. For June: In a haunting dream, Peter Norton, dressed as a rabbi, accuses you of piracy. Buy the software. Cancer figures in picture.

Scorpio. Scorpio is the sign for money and investing. This is the perfect time for expanding your system. It may also explain why this is when Mondo Marvin's Compute-O-Rama holds dollar days. For June: It's time to entertain. Invite your poker buddies into the den for a round of *Leisure Suit Larry IX: You Can't Do That in Georgia.*

Sagittarius. Sagittarius is patience, the listener, the hearer of wisdom. When told to insert a disk in the drive and close the door, the average Sagittarian will insert the disk, then close the office door. Sagittarius also governs expansion-slot covers, which true Sagittarians never throw away. For June: Nothing much going on, but that's no different from the usual.

Capricorn. Capricorn is the hungry wanderer. It's the sign for all the lost pieces of potato chips in your keyboard. Under this sign's influence, most users are apt to wedge a floppy disk in that tiny sliver of space between drives A and B. For June: Spirits will dampen when you realize you have saved every chapter of your book under the filename CHAPTER. Sell your firearms collection.

Aquarius. Aquarius is the combined sign of computer laptops and the table trays in modern airliners. Aquarius is also the month in which you'll most likely spill a liquid beverage into your keyboard. For June: Nothing much going on.

Pisces. Pisces is a troublesome sign for computers. It's during this month that the mythical wandering Esc key is rumored to find a permanent home. For June: Wedding bells may ring in the future. But remember: You're marrying the tall one, not the squat thing with four rubber feet. ◘

HOTWARE

SOFTWARE BESTSELLERS FROM AROUND THE COUNTRY

HOME PRODUCTIVITY

1. Tax Cut
Prepare for April 15.
MECA
IBM

2. Turbo Tax 1990
Speed up your tax calculations.
CHIPSOFT
IBM

3. Quicken
Manage your finances.
Intuit
IBM, Macintosh

4. The Print Shop
Make signs, cards, banners, and more.
Brøderbund
Apple II, Apple IIGS, Commodore 64/128, IBM, Macintosh

5. MacInTax
Mac-simize your tax refund.
SoftView
Macintosh

6. Calendar Creator Plus
Create many different calendars.
Power Up
IBM, Macintosh

7. Managing Your Money
Allocate your income.
MECA
Apple II, IBM, Macintosh

8. Print Shop Graphics Library
Add variety to your *Print Shop* creations.
Brøderbund
Apple II, Apple IIGS, Commodore 64/128, IBM

9. WillMaker
Get help in writing a will.
Nolo Press
Apple II, IBM, Macintosh

10. PC Globe 3.0
Explore world demographics.
PC Globe
IBM

HOME ENTERTAINMENT

1. Tetris
Deceptively addicting falling-block game.
Spectrum HoloByte
Amiga, Apple IIGS, Commodore 64/128, Macintosh

2. SimCity
Run the world's first simulated city.
Maxis
Amiga, Commodore 64/128, IBM, Macintosh

3. Flight Simulator
Head for the wild blue yonder.
Microsoft
IBM, Macintosh

4. SimCity Terrain Editor
Design your own *SimCity* landscapes.
Maxis
Amiga, IBM, Macintosh

5. The Hunt for Red October
Computer adaptation of Tom Clancy's book.
Electronic Arts
Amiga, IBM

6. Life & Death
Your chance to play surgeon.
Software Toolworks
Apple IIGS, IBM, Macintosh

7. Populous
Deities battle it out.
Electronic Arts
Amiga, IBM

8. Leisure Suit Larry III
Larry and Passionate Patti get together.
Sierra
IBM

9. Falcon
Air combat at its best.
Spectrum HoloByte
Amiga, IBM, Macintosh

10. ChessMaster 2100
Board strategy that isn't boring.
Electronic Arts
Apple II, Apple IIGS, Commodore 64/128, IBM

HOME LEARNING

1. Where in Time Is Carmen Sandiego?
Can you find Carmen in time?
Brøderbund
IBM

2. Math Blaster Plus!
Teaches basic math concepts.
Davidson & Associates
Apple II, Apple IIGS, IBM

3. Where in the World Is Carmen Sandiego?
Chase Carmen around the world.
Brøderbund
Amiga, Apple II, Commodore 64/128, IBM, Macintosh

4. Reader Rabbit
Helps children learn to read.
The Learning Company
Apple II, Commodore 64/128, IBM, Macintosh

5. Mavis Beacon Teaches Typing
Learn to touch-type.
Electronic Arts
Apple II, Apple IIGS, Commodore 64/128, IBM, Macintosh

6. Where in the USA Is Carmen Sandiego?
The chase moves to the USA.
Brøderbund
Amiga, Apple II, Commodore 64/128, IBM, Macintosh

7. Learning DOS
Learn the ins and outs of DOS.
Microsoft
IBM

8. The Playroom
Kids explore and learn on their own.
Brøderbund
IBM

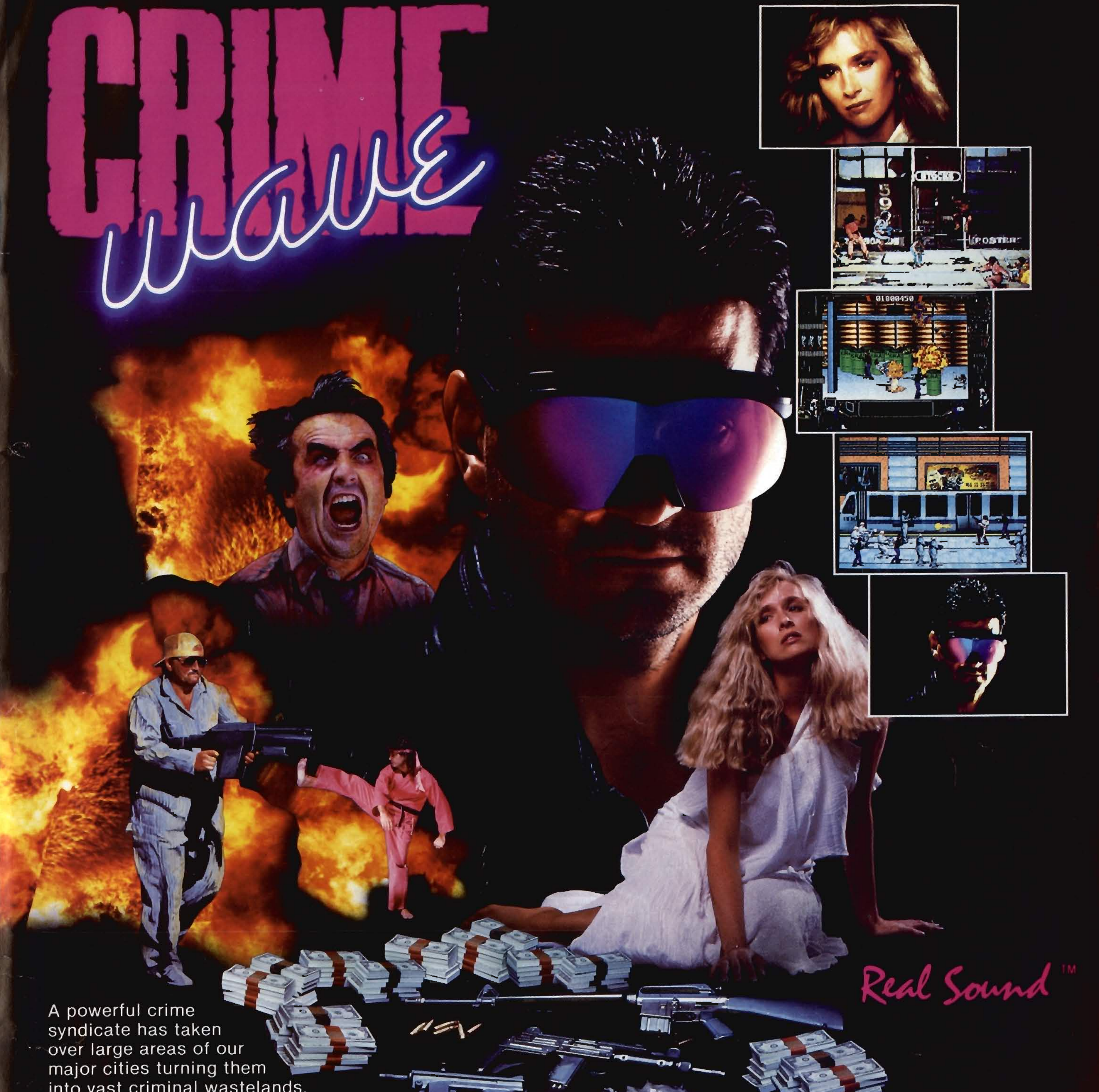
9. The Children's Writing & Publishing Center
A desktop publisher for kids.
The Learning Company
Apple II, Apple IIGS, IBM

10. Math Rabbit
Build early math skills.
The Learning Company
Apple II, Commodore 64/128, IBM, Macintosh

COMPUTE!'s Hotware lists were prepared by Egghead Discount Software and are based on retail sales of Apple II, Macintosh, and IBM software from February 4 through March 3, 1990, at 201 Egghead stores in the United States and Canada.

CRIME wave

ACTUAL 256 COLOR
VGA SCREENS



A powerful crime syndicate has taken over large areas of our major cities turning them into vast criminal wastelands.

Arson, extortion, drug distribution, murder and now...terrorist abduction! You have just learned that they have taken the U.S. President's daughter and are holding her and our country hostage.

YOU'VE HAD A GUT-FULL! . . . **YOUR PURPOSE:** To wipe out this criminal organization and rescue the president's daughter. Even with the most sophisticated Assault Technology available, it won't be easy. You are the only one that can save the country from this sinister infestation . . .

Bring arcade action home like never before!

Crime Wave, with *Real Sound*™ and 256 color digitized VGA graphics, puts you on the streets for real!

ACCESS
SOFTWARE INCORPORATED

545 WEST 500 SOUTH, BOUNTIFUL, UTAH 84010
(801) 298-9077   1-800-824-2549

Circle Reader Service Number 193

32203906
Electronics Boutique
Low Price
$ 2.95

I -COMMUNICATION SOFTWARE THAT'S EASY TO LEARN, SIMPLE TO USE AND AS CONVENIENT AS YOUR TELEPHONE!

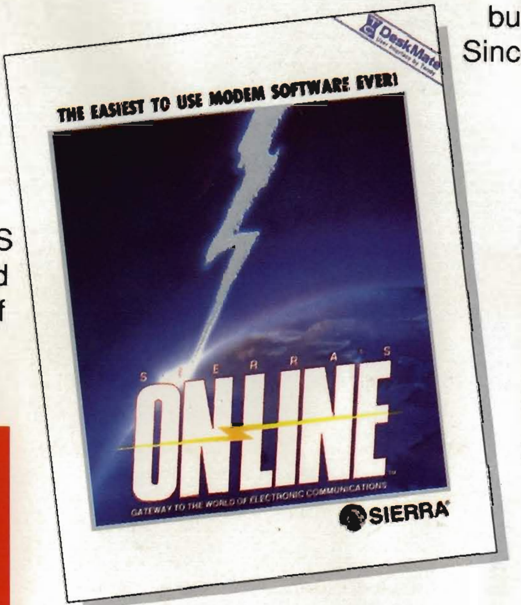
AS EASY AS PUSHING A BUTTON

That's right — an uncomplicated point and click pushbutton interface, using your mouse or three basic keys on your keyboard, makes SIERRA'S ON-LINE your gateway to the world of electronic communications.

NO COMPLEX COMMANDS TO MEMORIZE

Whether you're calling a big information service or a local bulletin board, with SIERRA'S ON-LINE you can upload and download files at the touch of a key, and perform even complex tasks, like compressing and decompressing files, with simple pull-down menus and pushbutton commands. Two compression programs included will save you time and money.

> "The surprise for me was SIERRA'S On-Line. I had never seen it before and was impressed with the simplicity of its operation. It is more powerful than it first appears. Its ease of use may at first fool you into thinking it has less to offer, but that isn't the case."
>
> PCM MAGAZINE


DeskMate
THE EASIEST TO USE MODEM SOFTWARE EVER!
SIERRA'S
ONLINE
GATEWAY TO THE WORLD OF ELECTRONIC COMMUNICATIONS
SIERRA

✓ SIMPLE TO USE
✓ EASY TO LEARN
✓ $ 69.95

AN INSTANT SOLUTION TO TELECOMMUNICATIONS DILEMMAS

SIERRA'S ON-LINE comes with an easy to read manual that explains many useful details about telecommunications in general, and also includes step-by-step instructions for accessing bulletin boards and information services. Since ON-LINE works without modification on most systems,you'll be up and running within minutes of installing the program.

TRY IT NOW FOR 30DAYS SATISFACTION GUARANTEED!

Order On-Line today and try it out. If you aren't completely satisfied, return it within 30 days along with your sales receipt and a short note telling us why you're returning it. This free trial offer is made by Sierra On-Line, Inc., one of the oldest and largest home software publishers in the world.

ORDER YOURS NOW!

(800) 326-6654

Or write: Sierra On-Line, Inc., P.O. Box 485, Coarsegold, CA 93614.

Please enclose this ad, or a copy, when ordering by mail. Visa, MasterCard, American Express accepted.

Circle Reader Service Number 145

California and Massachusetts residents please include sales tax.

SIERRA®